

050

National Defense

Budget function 050 comprises spending for national defense. Although 95 percent of that spending falls within the Department of Defense, function 050 also includes the atomic energy activities of the Department of Energy and smaller amounts in the budgets of other federal departments and agencies. CBO estimates that discretionary outlays for function 050 will be about \$283 billion in 2000. Mandatory spending in that function usually shows negative balances because of payments made to federal agencies. (In 1991, those receipts were unusually large because of reimbursements by foreign governments for some of the costs of the Persian Gulf War.) CBO's estimate of increased outlays for 2000 would mark the second consecutive year of nominal growth in defense spending.

Federal Spending, Fiscal Years 1990-2000 (In billions of dollars)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Estimate 2000
Budget Authority (Discretionary)	303.9	332.2	299.1	276.1	262.2	262.9	265.0	266.2	272.4	288.1	289.9
Outlays											
Discretionary	300.1	319.7	302.6	292.4	282.3	273.6	266.0	271.7	270.2	275.5	283.0
Mandatory	<u>-0.8</u>	<u>-46.4</u>	<u>-4.3</u>	<u>-1.3</u>	<u>-0.6</u>	<u>-1.5</u>	<u>-0.2</u>	<u>-1.2</u>	<u>-1.8</u>	<u>-0.6</u>	<u>-1.0</u>
Total	299.3	273.3	298.4	291.1	281.6	272.1	265.8	270.5	268.5	274.9	282.0
Memorandum:											
Annual Percentage Change in Discretionary Outlays		6.5	-5.3	-3.4	-3.5	-3.1	-2.8	2.1	-0.5	1.9	2.7

050-01-A Reduce U.S. Forces to START II Levels by 2007

	Savings (Millions of dollars)	
	Budget Authority	Outlays
2001	0	0
2002	0	0
2003	0	0
2004	0	0
2005	20	10
2001-2005	20	10
2001-2010	920	840

SPENDING CATEGORY:

Discretionary

RELATED OPTIONS:

050-01-B and 050-02

RELATED CBO PUBLICATION:

Letter to the Honorable Thomas A. Daschle regarding the estimated budgetary impacts of alternative levels of strategic forces,
March 18, 1998.

The second Strategic Arms Reduction Treaty (START II) will require the United States to cut its long-range nuclear forces to 3,500 warheads by 2003—roughly one-third of the 1990 level. START II was ratified by the Senate in 1996, but it faces an uncertain future in Russia's parliament, the Duma. Presidents Clinton and Yeltsin agreed to delay full implementation of the treaty until December 31, 2007, in an effort to encourage ratification by the Duma. However, the forces to be dismantled by that date must be made inoperable by the end of 2003.

Today's forces remain largely consistent with the START I treaty—500 Minuteman III intercontinental ballistic missiles (ICBMs) with three warheads each; 50 Peacekeeper ICBMs with 10 warheads each; 18 Trident submarines (each carrying 192 warheads on 24 missiles); and 94 B-52H, 94 B-1B, and 21 B-2 bombers. The Administration would achieve the 3,500-warhead limit in START II by eliminating all 50 Peacekeepers, four Trident submarines, and 23 B-52H bombers by the end of 2007. It would also reduce the number of warheads on Minuteman III missiles from three to one and on Trident D5 missiles from eight to five and redesignate its B-1B bombers as conventional bombers. Although the Administration has decided to eliminate the four Trident submarines over the next five years to save money, it plans to keep all 50 Peacekeeper missiles and 94 B-52Hs in the force until the Duma ratifies START II.

This option would reduce U.S. forces to START II levels even if the Duma does not ratify the treaty. Those cuts would be made by the end of 2007, the treaty's modified implementation date. The primary motivation would be financial; those changes would save \$920 million through 2010 relative to the Administration's plans. All of the savings would come from not having to operate Peacekeeper missiles after 2007. (There would be no savings from retiring the 23 B-52Hs because the Administration does not operate them today.) Savings could be \$750 million higher through 2010 if the forces were retired by 2003, the original implementation date for START II. If the Duma never ratifies START II and the Air Force is required to keep Peacekeeper in the force beyond 2010—when it will run out of missiles for test flights—there would be significant costs associated with either reestablishing the Peacekeeper production line or developing a replacement missile. Compared with that possibility, this option might save several hundred million dollars through 2010.

Supporters of this approach argue that keeping long-range forces at today's levels is unnecessary. According to several reports, Russia will have trouble maintaining its forces at START I levels. Many of its missiles and submarines are nearing the end of their service life, and production of replacements has slowed to a trickle or stopped altogether. For that reason, several prominent former opponents of START II in the Duma have recently urged ratification. Some advocates of this option also argue that adopting it will encourage the Duma to ratify the treaty.

Critics argue that U.S. forces should remain at START I levels. They oppose any unilateral disarmament. They also worry that Russia might build up its nuclear forces if a hard-line government came to power. In their view, the Duma will only ratify the treaty if it is faced with a robust U.S. START I force.

050-01-B Reduce Nuclear Delivery Systems Within Overall Limits of START II

	Savings (Millions of dollars)	
	Budget Authority	Outlays
2001	670	240
2002	420	340
2003	620	440
2004	690	540
2005	830	710
2001-2005	3,230	2,270
2001-2010	8,330	7,880
SPENDING CATEGORY:		
Discretionary		
RELATED OPTIONS:		
050-01-A and 050-02		
RELATED CBO PUBLICATION:		
<i>Letter to the Honorable Thomas A. Daschle regarding the estimated budgetary impacts of alternative levels of strategic forces,</i> March 18, 1998.		

This option would go one step farther than the previous alternative (050-01-A). It would reduce the number of missiles and submarines below the levels planned by the Administration for START II but keep the number of warheads at START II levels. Specifically, it would retire four additional Trident submarines and 200 Minuteman III intercontinental ballistic missiles by 2003, retaining 10 Tridents and 300 Minuteman IIIs. To keep the same number of warheads, the smaller Trident force would carry seven warheads on each missile instead of five (see option 050-02). Minuteman III missiles would carry one warhead. This option would keep the same number of nuclear bombers as option 050-01-A, each carrying an average of 16 warheads. In all, those forces would carry nearly 3,500 warheads—the limit set in START II.

Compared with keeping U.S. forces at START I levels, this option would save \$670 million in 2001 and \$8.3 billion through 2010. One-fifth of those savings—which were outlined in option 050-01-A—would come from reducing forces to the START II levels planned by the Administration and thus do not represent savings from the Administration's budget plan. However, this option would save an additional \$670 million in 2001 and \$7.4 billion through 2010 compared with the Administration's plan: \$3.1 billion from reduced operation and support costs (from retiring 200 Minuteman ICBMs and four additional Trident submarines) and \$4.3 billion from lower levels of investment spending (from canceling production of the D5 missile after buying 12 in 2000, extending the service life of fewer Minuteman missiles, and forgoing the Administration's plans to reconfigure four Trident submarines under START II so they can carry new D5 missiles).

During the Cold War, this option might have raised concerns about stability. By putting more nuclear "eggs" in fewer baskets, the United States would have increased its vulnerability to a surprise attack. But today those concerns are less acute. The United States may now decide that it can save money safely by deploying its warheads on fewer weapon systems. Moreover, this option would retain three types of nuclear systems—the so-called nuclear triad—and thus provide a margin of security against an adversary's developing a new technology that would render other legs of the triad more vulnerable to attack.

The disadvantages of this option include those raised in option 050-01-A about cutting forces below START I levels before Russia ratifies START II. In addition, carrying more warheads on D5 missiles would reduce the targeting flexibility of U.S. planners, and deploying fewer submarines might increase their vulnerability to Russian antisubmarine forces. Unilaterally cutting forces would also limit the United States' ability to increase the number of warheads it deployed if Russia decided not to abide by START II. Indeed, some critics argue that unilateral cuts would reduce U.S. leverage to get Russia to ratify START II. Supporters of this option, however, counter that U.S. cuts would encourage ratification because they would reduce the United States' potential to break out of START II—one of Russia's major concerns about the treaty.

050-02 Terminate Production of D5 Missiles After 2000

	Savings (Millions of dollars)	
	Budget Authority	Outlays
2001	670	240
2002	420	340
2003	620	440
2004	690	540
2005	920	780
2001-2005	3,320	2,340
2001-2010	4,870	4,710
SPENDING CATEGORY:		
Discretionary		
RELATED OPTIONS:		
050-01-A and 050-01-B		
RELATED CBO PUBLICATION:		
<i>Rethinking the Trident Force</i> (Study), July 1993.		

Under both Strategic Arms Reduction Treaties (START I and II), the Navy plans to deploy a force of 14 Trident submarines. Each one will carry 24 D5 missiles—the most accurate and powerful submarine-launched ballistic missile (SLBM) in the U.S. inventory. Today, the Navy has 10 Trident submarines armed with D5s and eight armed with older C4 missiles. To keep 14 submarines, it must convert four older subs to carry D5s as well. To arm that force, CBO estimates, the Navy will have to purchase a total of 425 D5 missiles, 372 of which it has already bought. If Russia ratifies START II, the Administration will probably cut the number of warheads on each missile from eight to five (for a total of 1,680) to keep the number of U.S. warheads near the ceiling allowed by that treaty.

This option would terminate production of D5 missiles after 2000 and retire all eight C4 submarines by 2005. The Navy would then have 372 D5s—25 more than it says it needs to support a 10-submarine force. Like the Administration's plan for START II, this option would wait to retire the C4 submarines to encourage Russian compliance with START II and to give the United States flexibility to stay at higher START I levels if Russia does not comply. To retain 1,680 warheads, the option would increase the number of warheads on each D5 missile from five to seven.

Compared with the Administration's plan for START I and II, this option would save \$670 million in 2001 and \$4.9 billion through 2010. The savings would come from canceling missile production (\$2.6 billion), retiring all eight C4 submarines rather than upgrading four of them (\$1.1 billion), and operating fewer subs (\$1.2 billion).

Terminating production of the D5 would have several drawbacks. Loading more warheads on existing missiles would reduce their range by roughly 20 percent, limiting the areas in which submarines could operate. It would also reduce the flexibility of the force, since missiles with fewer warheads can cover more widely dispersed targets. Deploying D5 missiles with seven warheads would also constrain the United States' ability to expand its SLBM force by adding back the extra warheads if Russia violated or never ratified START II. In addition, reducing the fleet to 10 submarines could increase its vulnerability to attack by Russian antisubmarine forces.

Nevertheless, some people may consider the capability retained under this option sufficient to deter nuclear war. Although the missiles' range and the submarines' patrol areas would be smaller, they would still exceed the levels planned during the Cold War—when Russia had more antisubmarine forces and the United States intended to deploy the D5 with eight large warheads (W-88s). Moreover, less targeting flexibility might not reduce the nuclear deterrent: 1,680 warheads deployed on 336 missiles might not deter an adversary any more than if they were on the 240 missiles called for in this option. Also, the smaller likelihood of nuclear war and Russia's atrophying nuclear forces may have weakened the rationale for the United States to be able to increase its forces rapidly by adding warheads to the D5. In fact, since the U.S. ability to do that is one of Russia's biggest concerns about START II, adopting this option could make passage of the treaty more likely.

050-03 Reduce the Scope of DOE's Stockpile Stewardship Program

	Savings (Millions of dollars)	
	Budget	Outlays
Authority		
2001	50	40
2002	120	100
2003	200	170
2004	280	250
2005	340	310
2001-2005	990	870
2001-2010	2,790	2,650

SPENDING CATEGORY:

Discretionary

RELATED CBO PUBLICATION:

Preserving the Nuclear Weapons Stockpile Under a Comprehensive Test Ban (Paper), May 1997.

The Department of Energy (DOE) has developed the Stockpile Stewardship Program to preserve the long-term reliability and safety of U.S. nuclear weapons without testing them by exploding them underground. To carry out the program, DOE plans to continue operating both of its weapons-design laboratories (Los Alamos and Lawrence Livermore) and its engineering lab (Sandia). It will also construct several new facilities to provide data on the reliability and safety of nuclear weapons as they age. In addition, DOE will conduct "zero-yield" subcritical tests at the Nevada Test Site so it can keep enough skilled technicians there to be able to resume testing nuclear weapons by exploding them underground if the United States decides that doing so is in the national interest—a capability that the President has ordered DOE to retain.

DOE plans to spend an average of \$2.5 billion a year over the next 10 years on what has historically been known as weapons research, development, and testing. To some observers, a budget of that size today is excessive and unnecessary.

This option would reduce the scope of the stewardship program by consolidating the two design laboratories and halting all testing activities at the Nevada Test Site. However, it would preserve the other elements of the stewardship program, including the Dual-Axis Radiographic Hydrotest (DARHT) facility at Los Alamos and the National Ignition Facility (NIF) at Lawrence Livermore. Taken together, the changes in this option would reduce employment by about 2,000 people. They would also save \$50 million in 2001 and \$2.8 billion through 2010 compared with the Administration's 2000 budget.

Those savings assume that weapons-design activities would be consolidated over five years at Los Alamos, which developed most of the weapons that are likely to remain in the stockpile. Lawrence Livermore's primary focus would become other scientific research. To ensure that the warheads it developed could be reliably maintained, some designers from Lawrence Livermore would be relocated to Los Alamos. However, a cadre of weapons scientists would remain at Livermore to act as an independent review team for Los Alamos's efforts. To provide them with challenging work, Livermore would keep large computational facilities for modeling the complex processes inside nuclear weapons and would build NIF as currently planned. (Alternatively, stewardship activities could be consolidated at Lawrence Livermore, but the savings would be lower.)

To some people, this option would cut the planned stewardship program too deeply. They believe that the program is the minimum effort necessary to maintain the nuclear stockpile without underground testing. In their view, scientists will need new facilities to obtain data on reliability that were formerly provided directly by such testing. They also contend that consolidation would reduce competition and peer review, result in the loss of some facilities that could not easily be transferred, and eliminate Lawrence Livermore's central unifying mission (and thus its motivation for excellence). For those reasons, the President has directed DOE to retain both labs. Closing the Nevada Test Site would increase the time needed to resume underground testing if Russia

started a new arms race or the United States discovered a serious problem with its stockpile that could only be corrected by testing. Closing the test site would also stop scientists from conducting subcritical experiments to learn more about how aging affects the plutonium components in nuclear weapons.

To other people, this option would not cut deeply enough. In their view, keeping part of a second lab and building DARHT and the \$1.2 billion NIF are unnecessary to support the nuclear stockpile. Furthermore, they claim, those facilities might allow DOE scientists to continue designing and testing weapons and circumvent the restrictions imposed by the Comprehensive Test Ban Treaty. Even if DOE has no such intentions, the perception of such a capability could make it difficult to convince countries such as India, which are critical of the United States' plans to preserve its nuclear weapons

under a test ban, that the United States has really given up designing new weapons. Critics also argue that NIF should be funded outside the nuclear weapons program if it can help scientists understand how to harness fusion for civilian energy, as supporters claim.

Finally, some analysts are fundamentally opposed to a U.S. moratorium on testing (which will become permanent if the United States ratifies the test ban treaty). They contend that the only way to ensure the reliability of U.S. nuclear weapons is to explode those weapons underground. They also worry that by halting the development and testing of new types of weapons, the United States will lose the skilled people necessary to preserve the stockpile. This option does not address the test ban directly, but the cuts it would make to the laboratories would probably be resisted by test-ban opponents.

050-04 Eliminate Two Army National Guard Combat Divisions

	Savings (Millions of dollars)	
	Budget Authority	Outlays
2001	247	218
2002	510	473
2003	527	516
2004	544	536
2005	561	554
2001-2005	2,389	2,296
2001-2010	5,460	5,325
SPENDING CATEGORY:		
Discretionary		
RELATED CBO PUBLICATIONS:		
<i>Making Peace While Staying Ready for War: The Challenges of U.S. Military Participation in Peace Operations</i> (Paper), December 1999.		
<i>Structuring the Active and Reserve Army for the 21st Century</i> (Study), December 1997.		

The Army National Guard has eight combat divisions. In 1995, the official Commission on Roles and Missions reported that several of those divisions were not needed to carry out the nation’s military strategy of being able to fight two nearly simultaneous major theater wars. Overall, the commission said, the Army has more than 100,000 excess combat troops that are not required for that security strategy. The commission also argued that the Guard has too many combat divisions even given its other missions, such as providing forces for rotation during wartime and supporting civil authorities at the state level.

This option would eliminate two National Guard combat divisions: one armored division and one mechanized infantry division. Doing so would reduce the Army’s excess combat forces by about 35,000. The Army is planning to convert about 48,000 Guard combat troops into combat-support and combat-service-support troops (through the Army National Guard Division Redesign program), but that conversion would still leave the Army with more than 50,000 extra combat troops. This option would eliminate most of that excess. (Since the Army has identified a shortage of support forces, this option would retain all of the support personnel associated with the eliminated divisions.)

The primary advantage of this option is the savings it would generate. Cutting the two divisions would save the Army an average of about \$550 million a year in operating costs over 10 years—funds that could be used to modernize the rest of the Army’s active-duty and reserve forces more quickly. Eliminating those divisions could also help the Army avoid some future costs, since the equipment in the two disbanded divisions would not need to be modernized.

This option would have several disadvantages, however. First, it would reduce the number of reserve forces available as reinforcements during wartime. But how risky such a reduction would be is unclear, because analysts disagree about whether Guard combat forces could be ready to fight in time to help in a major theater war. Second, these cuts might reduce the Army’s flexibility by leaving fewer reserve forces to use in peacetime missions. The Army has sent reserve combat troops to peace operations such as the long-running one in the Sinai Peninsula, and it plans to send more reservists to similar operations in the future. Third, this option would reduce the number of forces available for governors to call on to support missions in the states.

050-05 Cancel the Army's Comanche Helicopter Program

	Savings (Millions of dollars)	
	Budget Authority	Outlays
2001	42	71
2002	165	183
2003	178	232
2004	277	296
2005	247	278
2001-2005	909	1,060
2001-2010	6,270	4,531
SPENDING CATEGORY:		
Discretionary		
RELATED CBO PUBLICATION:		
<i>An Analysis of U.S. Army Helicopter Programs</i> (Study), December 1995.		

Many of the Army's helicopters are beyond the end of their useful service life. Initially, the Army had planned to replace some of those older scout, attack, and utility helicopters with more than 5,000 new Comanche (RAH-66) helicopters. Comanche has had a troubled development program, however. The utility version of the helicopter was dropped in 1988 because the program had become too costly. In 1990, the size of the planned purchase was reduced from more than 2,000 aircraft to just under 1,300. Later, the Army delayed the projected start of Comanche production from 1996 to 2005.

Those changes have caused the procurement cost per helicopter to nearly double since the program began—from \$11.7 million (in 2000 dollars) in 1985 to \$21.5 million, based on current Army estimates. With that cost growth, Comanche is now more expensive than the Army's Apache (AH-64) attack helicopter, even though it was developed to be less costly to buy, operate, and maintain than other attack helicopters. Moreover, the General Accounting Office (GAO) and the Department of Defense's Inspector General (DoD IG) have stated that costs could grow by as much as another 30 percent. In addition, GAO recently reported that there are significant risks that Comanche will enter service later than expected and will not work as well as planned.

The primary advantage of Comanche over existing aircraft is its sophisticated stealth, avionics, and aeronautics technologies. However, some analysts would argue that the helicopter, which was conceived at the height of the Cold War, will no longer face threats of the same scale or sophistication as those for which it was designed. According to the DoD IG, the Army has not reexamined the mission requirements for Comanche in any depth since the end of the Cold War (although it will need to do so in the context of the Army Chief of Staff's new restructuring plan). Comanche is intended both to serve as a scout for Apache and to fill the scout and light attack role independently. But whether Comanche really does have a unique role to play in Army aviation is unclear. The Army is planning to use Apaches in both scout and attack roles for the next 15 to 20 years, as it did successfully during the Persian Gulf War. The Army also used armed scout helicopters, known as Kiowa Warriors, in the Persian Gulf both as scouts for Apache and as light attack aircraft. Moreover, the Army could use unmanned aerial vehicles (UAVs) for some scout functions. Secretary of Defense William Cohen testified that U.S. forces used UAVs as scouts in Kosovo effectively and without the risk of losing aircrews.

This option would cancel the Comanche program. The Army has already purchased enough Apaches to fill the attack role assigned to 13 of its 18 divisions, but it does need to replace the aging Cobras assigned to the attack aviation units of the remaining divisions. This alternative would buy 519 Kiowa Warriors by the end of 2010 to replace the Cobras still in service. Net savings would total about \$6.3 billion over the 2001-2010 period. Some of the savings could be used to fund a program to continue development of advanced helicopter technologies. Abandoning the Comanche program, however, would mean that the Army would have to rely on helicopters designed in the 1960s and 1970s for years to come.

050-06 **Cancel the Army's Crusader Artillery Program**

	Savings (Millions of dollars)	
	Budget	Outlays
	Authority	
2001	201	117
2002	365	245
2003	280	225
2004	602	352
2005	569	419
2001-2005	2,016	1,358
2001-2010	6,687	5,444

SPENDING CATEGORY:

Discretionary

The Army plans to invest \$13.7 billion (in 2000 dollars) to develop and procure more than 1,100 Crusader artillery systems. It considers the Crusader—which includes a self-propelled howitzer and a resupply vehicle—to be technologically advanced and significantly more effective than the service's current artillery systems.

Supporters cite several reasons why Crusader is needed. The Paladin, the Army's most modern artillery system, is too slow to keep up with other combat vehicles when armored forces advance. Its range is shorter than that of several foreign systems available to potential adversaries. And Paladin's peak firing rate of four rounds per minute is significantly slower than the 10 to 12 rounds per minute that the Army says it needs. Crusader's current design includes an automated resupply system, which makes a higher firing rate possible and reduces the crew size to six from Paladin's nine. Crusader is also designed with more sophisticated automation and better crew protection.

Opponents, however, question whether a heavy system such as Crusader has a role in the lighter, more mobile force envisioned for the future Army. Some also question how much improvement Crusader will actually deliver. It may be only 9 kilometers per hour faster than Paladin, and it has encountered technical difficulties. The original concept called for a gun using liquid propellant. The Army had to abandon that technology in 1996 because of technical and schedule problems. In addition, some Crusader subsystems embody technological innovations that have not yet been proved, and some have no backups in case of failure. For example, if the automatic munition reloader fails, Crusader will not be able to fire since it cannot be loaded manually. Those technical risks could prevent Crusader from meeting some of the Army's key requirements, in which case it might be no more effective than current systems. As part of a restructuring plan proposed by the Army Chief of Staff, General Eric Shinseki, the Army is now scaling back its requirements for Crusader to reduce the system's weight and is cutting the number of systems it will buy by more than 50 percent.

This option would cancel the Crusader program and provide funds to procure 550 German PzH 2000 self-propelled howitzers (with resupply vehicles), which the General Accounting Office has identified as a viable alternative to Crusader. The PzH 2000 fires eight to 10 rounds per minute, and its cross-country speed of 45 kilometers per hour is within the range required for Crusader. Purchasing that system could hedge against potential threats while freeing \$6.7 billion over 10 years for the Army to pursue other promising technologies. For fire support in fast-moving advances, the Army could rely on the PzH 2000 systems or on the multiple-launch rocket system, which it used successfully in that role during the Persian Gulf War.

050-07 **Cancel the Army's Tank Upgrade Program**

Savings (Millions of dollars)		
Budget		
	Authority	Outlays
2001	525	85
2002	366	295
2003	377	379
2004	323	357
2005	123	307
2001-2005	1,712	1,422
2001-2010	2,107	2,064

SPENDING CATEGORY:

Discretionary

RELATED CBO PUBLICATION:

Alternatives for the U.S. Tank Industrial Base (Paper), February 1993.

The downsizing of the U.S. military and the unprecedented peacetime investment in modern weapons that occurred in the 1980s have sharply reduced the need for new weapons. In particular, the Army now has enough of the latest type of tank, the Abrams, to equip the forces it plans to field for the foreseeable future. As a result, the Army does not intend to buy new tanks for at least the next 15 years.

Instead, the Army has proposed upgrading about 1,000 M1s (the first model of the Abrams) to a later configuration, designated the M1A2. The upgrade program, which began in 1991 and ends in 2003, has two major goals: to increase the capability of Army tanks and to keep the facilities that produce tanks in business pending the need for a new tank to replace the Abrams. (Most of those facilities are owned by the government and operated by private contractors.)

In late 1999, the Army Chief of Staff presented a new vision for a much lighter and more rapidly deployable Army. One of its goals is a force that can deploy a brigade in four days, a division in five days, and five divisions in 30 days. Another goal is a force that can deploy abroad C-130 transport aircraft. What role heavy, current-generation tanks have in such a force is unclear. Upgrading those tanks might not be the best use of scarce funds. Also, although the M1A2 is 20 percent more capable than the M1 (as measured by one scoring system developed for the Department of Defense), converting 1,000 M1s to M1A2s would increase the total capability of the Army's 7,880 Abrams tanks by only 3 percent. That slight increase in capability would come at a high price—a total of about \$3 billion over the next 10 years.

This option would cancel the Army's upgrade program but would keep some of the major components of the tank industrial base in a mothballed status. By preserving production facilities, the United States would retain the capability to make new or existing types of tanks in the future. Mothballing the government-owned facilities would require an initial investment. But after taking those costs into account, this option would save \$525 million in 2001 and a total of \$2.1 billion through 2010. Those funds could be used to develop new, lighter vehicles for the future Army.

Closing the tank production line would have some disadvantages, however. Without an upgrade program, the U.S. inventory would include fewer of the most capable M1A2 tanks. As regional powers acquired better tanks, the absence of M1A2s might erode the United States' advantage in a war, even though the M1A1 remains a highly capable tank. Perhaps the most important drawback of this option is that some companies that manufacture tank components might close and thus be unavailable to produce tanks in the event of a crisis. A related concern is the potential loss of workers whose skills are unique to tank manufacturing.

050-08 Reduce Procurement of the Virginia Class New Attack Submarine

	Savings (Millions of dollars)	
	Budget	Outlays
	Authority	
2001	0	0
2002	0	0
2003	0	0
2004	400	30
2005	440	-60
2001-2005	840	-30
2001-2010	12,970	5,270

SPENDING CATEGORY:

Discretionary

As a result of the Quadrennial Defense Review, the Navy is reducing its force of attack submarines from 80 in 1996 to 50 by 2003. To meet that ambitious schedule, the Navy is decommissioning some of its Los Angeles class (SSN-688) submarines before they reach the end of their 30-year service life. (A recently released study prepared for the Chairman of the Joint Chiefs of Staff, however, calls for a force of 55 to 68 submarines. An option that examines increasing the attack submarine force to 68 appears in Congressional Budget Office, *Budget Options for National Defense*, March 2000.) Even as it is discarding older subs, though, the Navy is building newer ones. It ordered three Seawolf class submarines in the late 1980s and 1990s and is procuring the Virginia class New Attack Submarine (NSSN) to be their lower-cost successor. The reason for the additions is that the Joint Chiefs of Staff believe that the Navy will need 10 to 12 very quiet submarines by 2012 to compete with Russia's newest subs, which have become quieter, making them harder to locate and track.

The Virginia class submarine is designed to be as quiet as the Seawolf but will be smaller and slower, carry fewer weapons, and not be able to dive as deep. Although the Seawolf was designed primarily to counter the more severe threat posed by Russian submarines in the open ocean, the Virginia is being developed to operate in coastal waters close to potential regional foes.

The Navy ordered the first Virginia class submarine in 1998. It plans to buy one Virginia per year from 2001 to 2005 and two or three subs per year thereafter. Under that plan, 15 Virginia class submarines would be authorized between 2001 and 2010.

This option would save money by keeping the Los Angeles class submarines in service until the end of their normal 30-year life and slowing procurement of the Virginia class. To help maintain the industrial base for building subs and to modernize the fleet, the option would produce one Virginia per year from 2001 to 2010. At that pace, 10 Virginia class subs would be authorized between 2001 and 2010.

Producing the Virginia at low annual rates would save a total of almost \$13 billion over the next 10 years. Most of those savings would occur after 2005, when the submarines would be produced at a lower rate. (Had CBO reflected a higher force goal in this option, savings would be lower.)

During the Congressional debate on producing the third Seawolf, the Navy emphasized that although Russia's economic troubles mean it cannot operate its nuclear submarine fleet up to potential, it is still buying new, very quiet attack submarines at low rates. The Seawolf and the Virginia would both be quiet enough to meet the Joint Chiefs' goal of competing with those new Russian subs. Procuring a total of 10 Virginias in addition to the three Seawolfs would enable the Navy to field a force of 13 very quiet submarines by 2012, meeting the Joint Chiefs' requirement.

050-09 Reduce the Number of Aircraft Carriers to Ten and Air Wings to Nine

	Savings (Millions of dollars)	
	Budget Authority	Outlays
2001	4,460	850
2002	1,610	1,930
2003	1,940	2,320
2004	2,880	2,360
2005	1,740	2,410
2001-2005	12,630	9,870
2001-2010	24,370	22,660

SPENDING CATEGORY:

Discretionary

RELATED OPTION:

050-10

RELATED CBO PUBLICATION:

*Improving the Efficiency of
Forward Presence by Aircraft
Carriers* (Paper), August 1996.

The aircraft carrier is the centerpiece of the U.S. Navy. The Administration's defense plans call for a fleet of 12 carriers—11 active ships plus one, manned partly by reserves, that can also be used for training. Those ships require a total of 10 active and one reserve air wings. (The number of active air wings is one less than the number of active carriers because one of the Navy's carriers is usually undergoing a major overhaul.) They will also be accompanied by a mix of surface combat ships (usually cruisers and destroyers) and submarines to defend against aircraft, ships, and subs that threaten the carriers. The surface combatants and submarines can also attack targets on land.

Since the Cold War ended, some policymakers have argued that the United States does not need a force of 12 carriers. The total capability of U.S. tactical aircraft in the Navy and Air Force will substantially exceed that of any regional power that seems potentially hostile. Moreover, the capabilities of U.S. ships are unsurpassed worldwide.

This option would immediately retire one conventionally powered aircraft carrier and one nuclear-powered carrier. By the end of 2001, the Navy would have 10 carriers (nine active ships and one partial reserve carrier for training purposes). In addition, this option would eliminate two active air wings, leaving eight active and one reserve wings.

Compared with the Administration's planned forces, those cuts could save \$4.5 billion in 2001 and \$24 billion over the next 10 years. Of that amount, \$9 billion would result from not buying new carriers in 2001 and 2006, as now planned. The remaining savings would come from reduced operating costs associated with retiring two carriers and air wings. Those estimates include the cost of decommissioning the retiring ships—roughly \$100 million apiece. (Cutting carriers could also reduce the number of surface combatants, submarines, and aircraft the Navy would need to accompany them. Thus, the Navy might save more money on procurement and operations by not having to buy and operate as many other new ships and aircraft. Conversely, the Navy might need those ships to perform other missions, such as forward presence, once it had fewer carriers.)

Although reducing the force to 10 carriers might not impair the United States' ability to fight and win two regional wars (according to one analysis by the Department of Defense), having fewer ships would limit the Navy's ability to keep three carriers deployed overseas most of the time. That could substantially increase the strain put on the carrier force as long as policymakers continued to use aircraft carriers to respond to crises or to provide U.S. presence overseas as extensively as they have in recent years. With fewer ships available, the time that those ships spent at sea could increase. The high-quality sailors the Navy needs would therefore spend more time away from their homes and families, perhaps making them less inclined to stay in the service. (An option that would increase the carrier fleet to 14 appears in Congressional Budget Office, *Budget Options for National Defense*, March 2000.)

The Navy might be able to maintain more overseas presence with carriers by bringing new crews to the ships while they were at their foreign posts rather than waiting for them to return home. (The Navy does that with some minesweepers.) In addition, the Navy could use ships other than carriers (such as large flat-deck amphibious vessels or Aegis cruisers) to help maintain U.S. presence overseas.

050-10 Use Marine Corps Squadrons to Fill Out Navy Air Wings

	Savings (Millions of dollars)	
	Budget	Outlays
Authority		
2001	129	103
2002	265	229
2003	273	259
2004	280	274
2005	516	320
2001-2005	1,463	1,186
2001-2010	15,500	11,522

SPENDING CATEGORY:

Discretionary

RELATED OPTIONS:

050-09, 050-12, 050-13-A, 050-13-B, and 050-14

RELATED CBO PUBLICATION:

A Look at Tomorrow's Tactical Air Forces (Study), January 1997.

The F/A-18 is the workhorse of both Navy and Marine Corps fighter fleets. It has operated from the decks of aircraft carriers and in Marine air wings since the early 1980s. The Navy has a requirement for 34 squadrons of F/A-18s for its carrier air wings. (Each squadron consists of 12 planes.) The Marine Corps has 18 squadrons of F/A-18s to provide air support to Marine ground forces.

To decrease what some critics see as unnecessary redundancy between the Marine Corps and Navy forces, this option would cut six of the Navy's F/A-18 squadrons—the planes in two operational carrier air wings—and use six Marine Corps F/A-18 squadrons in their place. That change would result in operating savings of about \$300 million per year and a total of \$2.8 billion through 2010.

Investment savings would also result because the Navy could decrease its purchases of the F/A-18E/F by about 185 planes (taking into account the aircraft in the six eliminated squadrons, as well as the additional planes that the military would have needed to buy for maintenance and training purposes and to make up for expected attrition.) Assuming those planes were eliminated from the end of the F/A-18E/F procurement program, savings in procurement would amount to \$228 million in 2005 and \$12.7 billion over 10 years. Savings from fighter-procurement funds could be especially helpful to the Department of Defense (DoD) since its planned spending on fighters may exceed the amount it will actually be able to devote to such purchases.

DoD may not need all of the F/A-18 squadrons in the Navy and Marine Corps for the type of conflict that is probable today. In the Cold War era, Navy, Air Force, and Marine Corps fighters would have been likely to operate in different areas during a major European war. Each of the Navy's operational carriers would have needed its full complement of aircraft to provide air support for itself and its accompanying ships. Those carriers might well have been assigned to other missions that would take them away from the flanks of NATO, where Marine Corps ground operations were likely to have taken place. Air Force fighters would have been engaged in combat with fighters of the former Soviet Union over central Europe. Thus, the Marine Corps would have had to rely on its own squadrons for air support. But today, critics say, even major theater wars will probably be sufficiently confined that aircraft carriers and their air wings will be able to remain in the theater to provide air support. Air Force fighters might also be on hand to give air support to Marine forces.

When operating in the same area, however, those various fighters face a problem of space. Because Marine Corps F/A-18 squadrons cannot operate from the shorter decks of the amphibious ships that transport marines and their equipment, those squadrons must use aircraft carriers while at sea. But they cannot operate from carriers that have a full complement of Navy aircraft, because the number of planes associated with today's notional carrier wings approaches the number that can actually operate from a carrier deck. Thus, in wartime, either the Marine Corps's or the Navy's fighter squadrons—but not

both—could operate from the carriers' decks. In the face of equipment shortages, the Navy is already using five Marine Corps squadrons to fill out its carrier wings.

This option assumes that Marine Corps squadrons are kept rather than Navy squadrons. Marine Corps officers argue that the emphasis on both air and ground operations in their training makes them better suited to provide support to Marine ground units than pilots in Navy squadrons are. Moreover, Marine Corps pilots already train for such operations.

This option would have some significant drawbacks, however. It would cut a part of DoD's tactical air force structure that may be among the most useful in the future. Tactical aircraft have made significant contributions in recent conflicts. Fighter and attack aircraft have also been heavily used in recent peacetime operations, so cutting their number could further strain personnel and equipment in the units that remained. But an option such as this one may represent a force cut that will take place anyway, if future Administrations and Congresses are unable to devote more funds to fighter purchases.

050-11 **Defer Purchases of the Marine Corps's V-22 Aircraft**

	Savings (Millions of dollars)	
	Budget	Outlays
Authority		
2001	0	0
2002	0	0
2003	0	0
2004	22	3
2005	637	110
2001-2005	658	113
2001-2010	3,270	2,285

SPENDING CATEGORY:

Discretionary

RELATED OPTION:

050-14

RELATED CBO PUBLICATION:

Moving the Marine Corps by Sea in the 1990s (Study), October 1989.

The V-22 aircraft, which entered production in 1997, is designed to help the Marine Corps perform its amphibious assault mission (seizing a beachhead in hostile territory) and its subsequent operations ashore. The plane's tilt-rotor technology enables it to take off and land vertically like a helicopter and, by tilting its rotor assemblies into a horizontal position, to become a propeller-driven airplane when in forward flight. As a result, the V-22 will be able to fly faster than conventional helicopters. The Marine Corps argues that the plane's increased speed and other design features will make it less vulnerable when flying over enemy terrain and will provide over-the-horizon amphibious assault capability.

Despite all of those advantages, the Bush Administration tried to cancel the V-22, largely because of its price tag. Each aircraft bought for the Marine Corps is expected to have a unit procurement cost of \$61 million, on average—considerably more than most conventional helicopters. Nevertheless, the Congress has continued to fund the V-22, and the Marine Corps plans to buy a total of 360 planes. (The Air Force may eventually buy 50 V-22s for its special-operations forces, and the Navy plans to buy 48 for combat search-and-rescue missions and for logistics support of its fleet.)

The Marine Corps expects to acquire several other planes at the same time. During many of the years that it is purchasing V-22s, it also plans to buy large numbers of Joint Strike Fighters (JSFs) to replace its short-range bomber, the AV-8B, and its F/A-18 fighter attack aircraft. JSFs are expected to be relatively inexpensive as tactical fighters go—perhaps 60 percent of the price of the Air Force's sophisticated F-22. But when bought in quantity and combined with the cost of the V-22, their purchase would bring peak annual spending on the V-22 and JSF to about \$5.5 billion—roughly five times the amount requested for Marine Corps combat aircraft in this year's budget. (Technically, the V-22 and JSF are bought with Navy procurement funds.) If the Marine Corps cannot increase funding for those aircraft, it may have to modernize either its fighter fleet, its airborne amphibious assault fleet, or both more slowly.

This option would halve the Marine Corps's annual procurement of V-22s during the 2005-2010 period, when both V-22s and JSFs would be bought. As a result, the service's average funding requirements during those years would decrease to about \$5 billion. That sum may be more manageable than the Marine Corps's current plan and would save almost \$3.3 billion over 10 years.

Deferring purchases of V-22s would have drawbacks, however. The current amphibious assault fleet is made up of CH-46 and CH-53 helicopters that are more than 30 years old, on average. The CH-46s would remain in the fleet until their average age approached 50 if the V-22s deferred under this option were bought beginning in 2013, when planned V-22 purchases decrease sharply. (If the Marines had to engage in an extensive modification effort to retain those helicopters longer, the savings shown at left would be lower.) Also, the amphibious assault fleet provides more unique services than the Corps's fighter attack fleet. The Marines can probably count on the Navy's carrier-based F/A-18 aircraft to provide them with additional firepower, but they cannot get aerial amphibious assault assets anywhere else. Also, cutting V-22 purchases might decrease the Corps's ability to perform humanitarian missions and other peacekeeping activities, which have grown more common in recent years.

050-12 **Reduce Air Force Tactical Forces**

Savings (Millions of dollars)		
Budget		
	Authority	Outlays
2001	307	245
2002	632	550
2003	650	623
2004	669	654
2005	688	678
2001-2005	2,945	2,750
2001-2010	6,679	6,438

SPENDING CATEGORY:

Discretionary

RELATED OPTION:

050-13-A, 050-13-B, and 050-14

RELATED CBO PUBLICATION:

A Look at Tomorrow's Tactical Air Forces (Study), January 1997.

Today's Air Force includes about 20 tactical air wings—13 on active duty and seven in the reserves. (An Air Force tactical air wing traditionally consists of 72 combat planes, plus another 28 for training and maintenance purposes.) Substantial disagreement exists about whether all of those air wings are necessary, since U.S. tactical aircraft enjoy overwhelming superiority compared with the forces of any regional power that appears potentially hostile to the United States.

This option would reduce the Air Force's tactical fighter forces to 18 air wings by the end of 2001. That pace of reductions might be feasible inasmuch as the Air Force has cut the size of its fleet quickly in the past: it eliminated six air wings between 1990 and 1992 and another six by the end of 1996. Reducing the number of Air Force wings from 20 to 18 would lower the service's operating costs by \$307 million in 2001 and \$6.7 billion through 2010.

Further savings might be possible if the Air Force accompanied the force reduction with a reorganization that increased the number of planes per squadron and eliminated more squadrons. That practice (known as "robusting") allocates resources more efficiently, since each squadron or wing has high fixed costs. Increasing all Air Force squadrons to 24 planes could add significantly to the savings shown at left, though only if the Department of Defense (DoD) restructured units and bases to reduce overhead costs.

A reduction to 18 Air Force wings might leave the United States with an acceptable number of capable fighters. Even in terms of simple numbers, U.S. fighter inventories exceed those of any potential regional aggressor. Also, U.S. aircraft are more sophisticated than those of potential enemies.

However, retaining only 18 wings in the Air Force would not meet the military's current estimate of its requirements. Today's force planning assumes that the United States needs to be able to fight virtually simultaneous wars in two regions of the world—one in the Middle East and another, perhaps, in Asia. Winning two nearly simultaneous regional conflicts would require a minimum of 20 air wings, DoD has suggested.

Some analysts would also argue that additional cuts in Air Force wings ignore a major lesson from the Persian Gulf War: that aerial bombardment by tactical aircraft can be very effective and may greatly accelerate the end of a war, thus reducing loss of life among U.S. ground troops. The recent war in Kosovo was waged chiefly by U.S. and allied air forces, further emphasizing their key role in future conflicts. A sizable inventory of tactical aircraft—perhaps more than would be maintained under this option—might therefore be a wise investment.

050-13-A Reduce Purchases of the Air Force's F-22 Fighter

	Savings (Millions of dollars)	
	Budget	
	Authority	Outlays
2001	0	0
2002	320	46
2003	1,735	378
2004	1,842	1,045
2005	1,906	1,541
2001-2005	5,803	3,010
2001-2010	22,223	16,242

SPENDING CATEGORY:

Discretionary

RELATED OPTIONS:

050-11, 050-13-B, and 050-14

RELATED CBO PUBLICATION:

A Look at Tomorrow's Tactical Air Forces (Study), January 1997.

The F-22 is being developed as the Air Force's next premier fighter aircraft and is scheduled to begin replacing the F-15 soon. But the plane has experienced repeated delays, reductions in quantity, and increases in price during its almost 20-year development. This option would decrease the planned purchase of F-22s by 219 planes. Assuming that the reduction was evenly distributed over the F-22's purchase period, it would save a total of \$22.2 billion through 2010, although the savings would not begin until 2002. (A related option, 050-13-B, would cancel production of the F-22 altogether.)

The Air Force originally planned to buy more than 800 F-22s. After a series of cuts, the latest plan will buy only 339 aircraft—enough for about three air wings. Even if the Air Force makes no further cuts to planned purchases, it will have to pay \$120 million apiece for the F-22. That price will purchase a number of improvements in capability over other fighters. Even so, the F-22's cost makes it the most expensive fighter ever built.

The F-22 is the only tactical fighter program to survive from the Cold War period. (The other two fighters that the Department of Defense is planning—the Joint Strike Fighter and the Navy's F/A-18E/F—entered development after 1990. They are likely to be both less capable and less expensive than the F-22, although they may face many of the same threats.) The F-22's sophistication and cost, plus concerns about whether the plane will actually realize promised improvements in capability, have led some people to suggest that the F-22 is a legacy of the Cold War—a plane designed to fight many sophisticated Soviet fighters rather than the modest regional fighter forces it is more likely to encounter today. Such critics recommend canceling the program, or at least cutting planned procurement further. In its report on its fiscal year 2000 defense appropriation bill, the defense subcommittee of the House Committee on Appropriations expressed concerns about the plane's cost and capability. The Senate concurred and the Congress directed DoD to complete testing of the F-22 before spending procurement funds on production.

The Air Force could reduce production quantities to a total of 120 F-22s, enough to let the service field one air wing of the sophisticated fighters. Such a "silver-bullet" purchase would allow the Air Force to learn lessons about producing aircraft of the F-22's technological complexity but might still leave more than enough planes to perform the missions for which the service needs the F-22's degree of stealth and other performance advantages.

One possible disadvantage of this option is that it would make the Air Force's fighter fleets, which are already aging under current plans, even older. However, buying 219 F-15s to replace the cut in F-22s would remedy that problem. Although the F-15 is much less capable than the F-22, it is far more capable than the fighters of almost any of the United States' regional adversaries. A one-for-one offset of F-15s for F-22s would lower the 10-year savings from this option to \$10 billion.

050-13-B Cancel Production of the Air Force's F-22 Fighter

	Savings (Millions of dollars)	
	Budget Authority	Outlays
2001	3,069	655
2002	3,952	2,080
2003	5,037	3,174
2004	4,799	3,969
2005	4,799	4,467
2001-2005	21,657	14,344
2001-2010	43,091	36,842
SPENDING CATEGORY:		
Discretionary		
RELATED OPTIONS:		
050-11, 050-13-A, and 050-14		
RELATED CBO PUBLICATION:		
<i>A Look at Tomorrow's Tactical Air Forces</i> (Study), January 1997.		

As option 050-13-A discussed, although the Air Force has great hopes for its new F-22 fighter, the aircraft's development program has experienced numerous delays, reductions in quantity, and increases in price over almost 20 years. If the program does not deliver as promised—or if leaders in the Congress and the Department of Defense (DoD) decide that the plane's capabilities are too expensive to afford in today's budget environment—the F-22 could be canceled. Doing that without making any provisions for replacing the plane would save \$3.1 billion in 2001 and a total of \$43 billion over 10 years. If F-22 purchases were offset with F-15s, savings would drop to \$2.4 billion in 2001 and \$25 billion over 10 years.

Outright cancellation would save more money than a “silver-bullet” purchase of F-22s (as described in option 050-13-A). But it would have several disadvantages. Cancellation of the F-22 could affect development of the Joint Strike Fighter, since DoD expects the two planes to have common design elements. In addition, the U.S. military might need the F-22's stealthy design and other characteristics if other countries improved their fighter capabilities. Finally, if beginning another top-of-the-line fighter program to replace the F-22 proves necessary, some of the costs already incurred in developing the F-22 could be paid again in a new development program, adding to the government's overall costs.

050-14 Slow the Schedule of the Joint Strike Fighter Program

	Savings (Millions of dollars)	
	Budget Authority	Outlays
2001	687	407
2002	-73	183
2003	284	178
2004	557	398
2005	1,604	675
2001-2005	3,058	1,841
2001-2010	22,320	16,051

SPENDING CATEGORY:

Discretionary

RELATED OPTIONS:

050-09, 050-11, 050-12, 050-13-A,
and 050-13-B

RELATED CBO PUBLICATION:

*A Look at Tomorrow's Tactical Air
Forces* (Study), January 1997.

One of the military's most ambitious aircraft development programs is the Joint Strike Fighter (JSF) program. Variants of the JSF are intended to replace planes in the Air Force, Navy, and Marine Corps; they account for two-thirds of the fighter aircraft the military expects to buy through 2020. The Department of Defense (DoD) intends to develop and begin purchasing the JSF by 2005—only nine years after the plane's first acquisition milestone. That interval is about 40 percent less than the time DoD has spent developing the F-22, the other new jet fighter it is developing from scratch. Many experts question whether DoD will actually be able to keep to such a tight schedule in a program that is supposed to produce three versions of the aircraft for three services.

This option would postpone fielding the JSF by two years to make the program's schedule more closely reflect recent experience with fighter development. That slowdown in development and production would decrease requirements for funding by \$3 billion over the next five years and \$22.3 billion through 2010.

The program office expects to need a total of about \$23.4 billion to develop the three variants of the Joint Strike Fighter: an inexpensive multirole fighter for the Air Force; a longer-range, stealthy, ground-attack plane for the Navy; and a short-takeoff/vertical-landing fighter for the Marine Corps. (That sum includes about \$1.3 billion invested by several foreign governments, including the United Kingdom's, that expect to purchase one or more of the variants.) The JSF program amalgamated three fighter programs that had been under way: the Air Force's multirole fighter, the Navy's A/FX, and the Marine Corps's ASTOVL program. Although the JSF variants will perform significantly different missions, they are expected to have much in common. DoD wants them to be more capable than current-generation aircraft but only slightly more expensive, if at all.

Satisfying the diverse needs of prospective users of the JSF could be challenging. Nevertheless, DoD plans to begin buying the planes just six years from now. The Joint Strike Fighter became a major defense acquisition program in May 1996; under the current schedule, the first formal review will take place in 2001, when the program is scheduled to enter the engineering and manufacturing stage of development (EMD). The JSF would then be produced in 2005, just four years after EMD began and nine years after it became a major acquisition program. The F-22 program, by contrast, has already been running for 14 years and may take a year or more to enter low-rate production (see options 050-13-A and 050-13-B). Some analysts might argue that the F-22's experience is not a good indicator for the JSF, since the F-22 was expected to represent a greater technological leap over its predecessor. But with the JSF's multiple missions and sponsors and the services' ambitious cost goals for the fighter, others might argue that the JSF program will be even more complex.

If the original JSF schedule is actually attainable, delaying it by two years would have several major drawbacks. Despite saving money in the near term, the delay could add to development costs. In addition, delay would exacerbate

the aging problem of DoD's fighter fleets. Even under current plans for the JSF, when large-scale deliveries begin toward the end of the next decade, fighters in the Navy and Marine Corps fleets will be an average of almost 15 years old. The Air Force fighter fleet will average almost 20 years of age when that service receives bulk deliveries of JSFs. Both averages exceed the ages at which each of those services has retired fighter planes in the past.

If, however, delays in developing the JSF are inevitable, a less ambitious, more realistic schedule would add to neither costs nor fleet ages. Revising the JSF schedule would permit DoD to plan its future courses of action better. For example, actions to deal with fleet aging might include buying more current-generation aircraft or modifying the planes in existing fleets.

050-15 Create Common NATO Airlift and Cut U.S. C-17 Costs

	Savings (Millions of dollars)	
	Budget	Outlays
	Authority	
2001	0	0
2002	1,893	274
2003	943	890
2004	80	981
2005	179	637
2001-2005	3,094	2,783
2001-2010	4,037	3,983

SPENDING CATEGORY:

Discretionary

RELATED CBO PUBLICATIONS:

Moving U.S. Forces: Options for Strategic Mobility (Study), February 1997.

Assessing Future Trends in the Defense Burdens of Western Nations (Paper), April 1993.

The C-17 Globemaster III is a four-engine transport aircraft that can carry at least 110,000 pounds of cargo for 3,200 nautical miles without aerial refueling. Because it is designed to land at small airfields with short runways, the C-17 could help meet transport needs within a theater of combat as well as over long distances. The current plan for transporting U.S. forces to regional conflicts calls for a fleet of 120 C-17s. At the same time, seven of the United States' European allies in the North Atlantic Treaty Organization (NATO) are planning to buy a total of 289 transport aircraft to carry reaction forces to crisis spots outside the territory of NATO members, in accordance with NATO's Strategic Concept.

This option would create a common NATO airlift fleet of 20 C-17s (similar to the common NATO AWACS fleet based in Germany, for which the United States pays 41.5 percent of operating and modernization costs). Twenty C-17s that the Air Force plans to buy in 2002 and 2003 would be transferred to NATO, which would reimburse the Air Force for them by the beginning of each year in order to comply with full-funding requirements. The average cost of those planes is about \$200 million apiece.

A common NATO airlift fleet would enable the allies to deploy forces to a crisis zone, while allowing the United States to draw on those assets for non-NATO missions under the Combined Joint Task Force (CJTF) concept approved in 1996. That concept allows NATO members—with consensus from the alliance—to use NATO assets for missions other than defense of a member state.

Assuming that the United States paid 41.5 percent of the cost of the NATO airlift fleet, this option would achieve net savings for the United States of \$3.1 billion over five years and \$4.0 billion over 10 years, including net savings of about \$200 million per year in operation and support costs once all 20 aircraft were delivered. It also would give the European allies faster access to strategic airlift than would otherwise be the case.

This option would face two main obstacles, however. The first is the European countries' desire to protect their defense industries by building their own strategic transport plane. The seven countries involved have committed to a joint program to develop the Future Large Aircraft (FLA), to be produced by the Airbus consortium. That plane would carry less cargo than the C-17 and be cheaper (at \$75 million apiece). Alternatively, the Europeans could consider buying Airbus commercial aircraft, although such planes are more difficult to load and unload, cannot carry very large cargo, and cannot land on some shorter or unpaved runways. Enthusiasm for developing the FLA is waning, however. In an indication that they will consider alternatives, Britain, France, Spain, and Belgium have all solicited bids from U.S. firms for a total of 143 aircraft, and Britain intends to lease four C-17s or their equivalent.

The second obstacle involves the political ramifications of relying on NATO to provide part of the U.S. Air Force's lift capability. The CJTF concept, designed to let European coalitions act without U.S. involvement, is new and evolving. Conceivably, if a NATO member opposed a mission (such as France opposing military action against Iraq), it might be able to veto U.S. use of NATO assets. Some Members of Congress might find that saving money would not outweigh the risk of diminishing the U.S. ability to act unilaterally if necessary.

050-16 Cut Requirements for Pilots in Nonflying Positions

	Savings (Millions of dollars)	
	Budget Authority	Outlays
2001	145	115
2002	204	184
2003	238	224
2004	272	259
2005	306	294
2001-2005	1,164	1,077
2001-2010	2,862	2,754
SPENDING CATEGORY:		
Discretionary		
RELATED CBO PUBLICATION:		
Statement of Christopher Jehn, Assistant Director, National Security Division, on Pilot Retention: Issues and Possible Solutions, before the Subcommittee on Military Personnel of the House Committee on Armed Services (Testimony), March 4, 1999.		

The Air Force and the Navy have fewer pilots than their stated requirements call for. In 1999, both services reported shortfalls of more than 1,000 pilots. The two services have undertaken several initiatives to address that problem, including paying special bonuses under the Aviation Continuation Pay program. But despite those efforts, pilot shortfalls are expected to persist for the foreseeable future.

This option would use an additional approach to address that problem: reducing the stated requirements for pilots in nonflying positions. Cutting those requirements by two-thirds would save \$115 million in outlays in 2001 and \$2.7 billion over 10 years by reducing the number of pilots who would need to be trained.

Both the Air Force and the Navy have many more pilots than they need for critical cockpit or flying positions. The shortfalls reflect the fact that the services have included many nonflying positions in their requirements for pilots. At the end of 1998, for example, nearly one-fourth of the Air Force's roughly 13,400 pilots were in nonflying positions, as were about half of the Navy's 6,600 pilots.

Supporters of this option would argue that some of the nonflying billets identified as requiring pilots are already being adequately filled by personnel with other backgrounds. In addition, the services could employ aviation navigators in some nonflying positions that require the expertise of a pilot.

The principal disadvantage of this option is that reducing the number of nonflying positions reserved for pilots could limit pilots' opportunity to gain the broader experience they need to progress in their careers. That problem might be alleviated, however, if the Air Force and Navy established a fly-only career path specifically for pilots who wanted to spend all 20 years of their military service in flying assignments. (Some pilots have indicated that they joined the military to fly and might be willing to stay in such a career path even if it limited their ability to be promoted.) A fly-only career path would lessen the number of nonflying positions needed to provide pilots with career-broadening opportunities. Another disadvantage of this option is that it might not leave enough shore billets for Navy pilots to rotate into between their tours at sea.

050-17 Restructure the Officer Corps

	Savings (Millions of dollars)	
	Budget	
	Authority	Outlays
2001	-242	35
2002	123	331
2003	517	655
2004	904	982
2005	1,644	1,394
2001-2005	2,945	3,397
2001-2010	12,120	11,990
SPENDING CATEGORY:		
Discretionary		
RELATED CBO PUBLICATION:		
<i>The Drawdown of the Military Officer Corps</i> (Paper), November 1999.		

As part of the post-Cold War drawdown in the military, each of the services cut its officer corps significantly. Those cuts, however, were accompanied by a change in the composition of the armed forces. The ratio of enlisted personnel to officers declined from 6.0 to 1 in 1989 to 5.2 to 1 in 1999 because the officer corps was cut by a smaller percentage than enlisted personnel. The percentage of senior officers—those in the general or flag grades as well as the so-called field grades (major through colonel)—increased. The percentage of officers who entered the military through the service academies also rose.

This option would offset those apparent consequences of the drawdown. It would return the enlisted-to-officer ratio and the percentage of general and flag-level officers to the levels that existed in 1989, when the drawdown began. In addition, the percentage of newly commissioned officers trained in the service academies would be reduced. The option would also reduce the number of field-grade officers, restoring the limits on those positions to levels consistent with the Defense Officer Personnel Management Act before the drawdown. Compared with the Administration’s budget request for 2000, those changes would save \$35 million in outlays in 2001 and a total of \$12 billion through 2010.

In carrying out the drawdown, the services tried to protect officers who were already in the force, many of whom had based their career expectations and financial plans on continued military service. The decline in the enlisted-to-officer ratio suggests that those efforts may have created an unbalanced force. The services might argue that the decline was driven by changing requirements as a result of new technologies and military doctrines that have decreased the need for enlisted personnel relative to the need for officers. But some critics see the timing of the shift as suspicious. Moreover, when the drawdown began, none of the services expected that their future requirements for enlisted personnel would fall as much as they did relative to requirements for officers. This option would restore the enlisted-to-officer ratio to the 1989 level of 6.0 to 1 by reducing the size of the officer corps by about 15,900 and increasing the size of the enlisted force by an equal amount.

That reduction would be targeted primarily toward officers in the field, general, and flag grades. The percentage of general and flag officers would be reduced gradually to the 1989 level by restricting promotions into those grades. Reductions in the field grades could be achieved by encouraging officers to leave the service voluntarily, through such programs as the temporary early retirement authority (TERA), voluntary separation incentive (VSI), and special separation benefit (SSB).

Over a period of four to five years, the number of general or flag officers would be reduced by about 200 through attrition, while about 12,600 field-grade officers and 3,100 junior officers (second lieutenant through captain) would be separated. Assuming that field-grade officers with less than 20 years of service would receive TERA and those with 6 to 15 years of service would receive VSI or SSB, the savings in pay would initially be offset entirely by the

cost of separation payments. Net savings in pay would amount to a total of \$9.6 billion through 2010.

Supporters of this option would argue that the services' actions have resulted in a force that is too senior and contains more officers than needed to lead the remaining enlisted personnel. In their view, much of the expertise and combat readiness that senior officers provide could be obtained at lower cost from highly capable senior enlisted personnel and junior officers. Opponents, by contrast, might argue that separating additional senior officers would constitute a breach of faith because it would cut short the careers of some service members. Moreover, the services' efforts to implement the Goldwater-Nichols Defense Reorganization Act of 1986 and the Defense Acquisition Workforce Act of 1990 may have increased requirements for those relatively senior officers.

This option would also return the mix of academy and nonacademy graduates entering active duty to the level that prevailed before the drawdown. Although the number of students in the service academies declined during the drawdown, academy graduates account for 14 percent of new officers now compared with 9 percent in the early 1980s. Under this option, the total number of officer accessions would remain at the level planned by the Department of Defense, but the services would draw

more officers from lower-cost commissioning programs—the Reserve Officer Training Corps (ROTC) and Officers Candidate School/Officer Training School (OCS/OTS)—and fewer from the more costly service academies. The estimated savings from that action reflect only the costs that would change in the near term, such as operating expenses and pay for faculty and cadets. Those savings would be partially offset by additional costs of about \$350 million over 10 years to procure officers from OCS and ROTC to replace those from the academies. As a result, this change would save \$75 million in outlays in 2001 and a total of nearly \$2.4 billion through 2010. In the longer term, savings might also accrue from changes in the academies' physical plant.

Supporters of changing the mix of new officers might argue that the academies are larger than many successful private colleges and that additional cuts to them are feasible. Moreover, a balanced mix of academy graduates and accessions from other commissioning programs may be needed to maintain good civil/military relations and ensure that the officer corps reflects the full diversity of U.S. society. Opponents of that change would contend that the service academies are the best source of future military leaders and that academy graduates are well worth the dollars spent on them. Some opponents might also argue that the academies have already reduced their class size to the minimum efficient level.

050-18 Deny Unemployment Compensation to Service Members Who Leave Voluntarily

	Savings (Millions of dollars)	
	Budget	Outlays
Authority		
2001	134	134
2002	145	145
2003	162	162
2004	181	181
2005	188	188
2001-2005	810	810
2001-2010	1,852	1,852

SPENDING CATEGORY:

Discretionary and Mandatory

Many military personnel who voluntarily leave active-duty service are eligible for unemployment benefits. That situation contrasts with the situation of civilian workers—who must have left their job involuntarily to qualify for unemployment compensation—even though payment amounts for the two groups are calculated the same way.

This option would subject former military personnel to the same rules as members of the civilian labor force; in other words, only personnel who left the service involuntarily would be eligible to receive unemployment benefits. That change would reduce the number of departing personnel eligible for benefits by at least two-thirds and save an average of \$185 million annually through 2010. Because the Department of Defense ultimately reimburses the Department of Labor for the cost of unemployment payments to former service members, most of those savings (\$1.8 billion through 2010) would occur in the defense budget. A small portion of the savings (\$57 million through 2010) would occur in the Department of Labor’s budget. (The latter savings would be in mandatory spending.)

Most personnel who leave military service do so voluntarily. Many choose not to reenlist after completing a term of service; others, who have served for a minimum of 20 years, opt for voluntary retirement. A much smaller group is separated involuntarily for reasons related to job or promotion performance or, in recent years, to the drawdown of military forces. Although the pressures associated with the drawdown may have blurred the line between voluntary and involuntary separation in the past, the end of the drawdown has restored that distinction.

Proponents of this option would argue that in addition to saving money, it would subject military personnel to the same rules as the rest of the workforce. Thus, in their view, it would make more equitable use of an entitlement program that was established with the intent of aiding people who lost their job involuntarily.

Critics, by contrast, might argue that the frequent moves associated with military service mean that members who separate voluntarily are unlikely to take up residence in the area of their final posting, making it difficult for them to find a new job before they leave the service. In those critics’ view, voluntary separation from military service is not comparable with voluntary termination of civilian employment and therefore should not be subject to the same restrictions on eligibility for unemployment compensation.

050-19 Downsize the Military Medical System

	Savings (Millions of dollars)	
	Budget Authority	Outlays
2001	-241	-408
2002	-700	-1,041
2003	222	-442
2004	1,284	736
2005	3,204	2,719
2001-2005	3,770	1,565
2001-2010	31,097	27,687
SPENDING CATEGORY:		
Discretionary		
RELATED OPTION:		
050-20		
RELATED CBO PUBLICATION:		
<i>Restructuring Military Medical Care</i> (Paper), July 1995.		

The extensive medical system run by the Department of Defense (DoD) is the chief source of health care for some 5.3 million people in the United States. DoD's primary justification for the system is that it is necessary to ensure care for service members in wartime. During peacetime, the system trains medical personnel for war and provides care for active-duty service members, retirees, and dependents of both groups.

This option would substantially reduce the size of DoD's direct care system, cutting the number of beds in military facilities to the amount that DoD would need to care for two-thirds of the casualties it anticipates from two nearly simultaneous major wars. As part of that downsizing, DoD would convert many military hospitals into outpatient clinics, close other facilities, and reduce the number of active-duty physicians. This option would also discontinue the Tricare program for retirees and all types of dependents, requiring them to seek care in the civilian sector. Those younger than 65 would be offered coverage through the Federal Employees Health Benefits (FEHB) program, and those 65 or older (who now receive care at military hospitals and clinics only when space is available) would use their Medicare coverage and any private insurance they obtained.

Such restructuring of the military medical system would require additional spending in the near term but would offer substantial savings later on. Total net savings in outlays would be nearly \$28 billion through 2010. That estimate reflects savings from operating a smaller military system, assuming that DoD faces the same upward pressures on the cost of care that private-sector providers and insurers do. It also takes into account higher Medicare spending (as older military beneficiaries rely more heavily on their Medicare benefits), the costs of closing facilities, and the costs of providing FEHB coverage to beneficiaries younger than 65. Under this option, DoD would pay the same share of the premiums for FEHB health plans that other federal agencies do for their civilian employees. In addition, families of active-duty service members who enrolled in FEHB would receive a voucher that covered much or all of the remaining share of the premium.

Supporters of downsizing note that although DoD's wartime medical requirements during the Cold War were based on the scenario of a large conventional conflict in Europe, more recent planning scenarios have led to sizable cuts in those requirements. Today, between military medical facilities, hospitals run by the Department of Veterans Affairs, and civilian facilities that have agreed to provide beds during a national emergency, the United States has more than twice the hospital capacity needed to meet the current wartime demand for 13,400 beds. Moreover, even after making the reductions in this option, DoD would still have about 9,000 beds in its expanded system—a much higher percentage of its wartime requirement than it met during the Cold War.

DoD would probably see several disadvantages, however, to making such deep cuts to its health care system. Military medical officials argue that DoD facilities and the care they provide in peacetime are essential for recruiting and training physicians and ensuring medical readiness. Downsizing that system to

such an extent would require DoD to modify the way it trains and prepares for wartime. For example, it would need to strengthen ties with the civilian sector to provide casualty training for military medical personnel and to continue ensuring an adequate supply of beds for wartime.

Another potential drawback of this option is that those older beneficiaries who are able to rely on military facilities would have to seek care elsewhere. In addition, some beneficiaries who enrolled in FEHB plans would pay substantially more out of pocket than they do for care in the military system. Military retirees and their dependents would pay about 30 percent of their FEHB premium. (Dependents of active-duty members would pay little or no premium after receiving their voucher.) And enrollees in most FEHB plans would face copayments or

deductibles for outpatient visits, prescription drugs, and other medical services.

Proponents of this option would counter that higher out-of-pocket costs could prompt more prudent use of medical care than in DoD's direct care system, where many services are provided at no or low cost. In addition, they might say, many FEHB plans would offer improved coverage and so might be worth the greater out-of-pocket expense. Moreover, the value of DoD's health benefits has grown dramatically with advances in technology and medical practices. Thus, proponents would argue, it is reasonable for military beneficiaries to share more of the costs associated with those advances—as many people covered by employer-sponsored plans in the private sector already do.

050-20 **Revise Cost Sharing for Military Health Benefits**

	Savings (Millions of dollars)	
	Budget Authority	Outlays
2001	327	276
2002	437	411
2003	444	436
2004	455	451
2005	467	463
2001-2005	2,131	2,037
2001-2010	4,135	4,025
SPENDING CATEGORY:		
Discretionary		
RELATED OPTION:		
050-19		
RELATED CBO PUBLICATION:		
<i>Restructuring Military Medical Care</i> (Paper), July 1995.		

Some 8.1 million active-duty service members, military retirees, and their dependents are eligible to use the military health care system worldwide, yet only 5.8 million actually do on a full-time basis. Because the Department of Defense (DoD) does not require users to enroll, many of them choose to seek military care on a case-by-case basis to augment other insurance coverage. Thus, military planners face major uncertainties about their patient load and health care costs each year.

The military health system offers three types of coverage: Tricare Prime, a plan similar to health maintenance organizations; Tricare Standard, a traditional fee-for-service insurance program; and Tricare Extra, a preferred provider option. Beneficiaries must enroll in Tricare Prime if they wish to use it, or they may use Tricare Standard or Extra without enrolling.

This option would make three changes to that system. First, all beneficiaries (except those on Medicare) would have to enroll in one of the three programs before using the military health care system. The annual enrollment fee for Tricare Prime would remain the same (no charge for active-duty personnel and their families and \$230 for single coverage or \$460 for family coverage for retirees). Under Tricare Extra or Standard, active-duty personnel would still pay no fee, but retirees would pay \$115 a year for single or \$230 for family coverage. Second, DoD would adjust enrollment fees for inflation by the annual change in the consumer price index for medical expenses. Third, users of Tricare Prime would pay the same copayments for outpatient care at military facilities (where they now pay nothing) as they do at civilian providers. In addition, all retirees would begin to pay small copayments if they chose to receive care at military facilities.

Together, those three changes would lower discretionary appropriations by \$327 million in 2001 and \$4.1 billion through 2010. The savings would stem from enrollment fees, increased copayment charges, and more prudent use of care by beneficiaries. Under current law, DoD is allowed to spend some of the revenues it collects through copayments. This estimate assumes that the Congress would reduce DoD's appropriations by the amount of revenue collected under the option. However, if the Congress revoked DoD's automatic reimbursement authority, the estimate would take the form of an offset to mandatory spending.

By requiring beneficiaries to enroll, DoD could identify who uses its system. Military providers need to plan for the health care needs of a defined population to develop per capita budgets and build cost-effective delivery networks.

Proponents of this option could argue that the value of DoD's health benefits has risen with advances in medical technology, so users should expect to bear some of the associated cost, just as employees of private firms have. In addition, charging copayments would help curb excessive use of services by creating the same incentives for beneficiaries who receive care on-base as for those who use civilian providers. It would also eliminate the inequity of providing more generous benefits to people who live near a military hospital or clinic.

On the negative side, many military families and retirees would view even modest copayments at military facilities as an erosion of their benefits. Retention and morale might suffer, even though this option would still offer service members and their families more generous health benefits than most government or private-sector employers do.

050-21 Have DoD and VA Purchase Drugs Jointly

	Savings (Millions of dollars)	
	Budget	Outlays
	Authority	
2001	26	21
2002	74	63
2003	78	74
2004	82	80
2005	86	84
2001-2005	346	323
2001-2010	843	810
SPENDING CATEGORY:		
Discretionary		
RELATED OPTIONS:		
700-05		

In 1997, the Departments of Defense (DoD) and Veterans Affairs (VA) spent about \$1 billion and \$1.3 billion, respectively, on pharmaceutical products for patients in their health care systems. Nationwide, spending on prescription drugs has grown roughly twice as fast in recent years as total national health spending. Constraining such cost growth is an important goal for DoD and VA: each operates its large health care system on a fixed annual appropriation, so spending more on prescription drugs means it has fewer resources to devote to other types of care for its beneficiaries.

This option would consolidate DoD’s and VA’s purchases of pharmaceutical products, as the Congressional Commission on Servicemembers and Veterans Transition Assistance has recommended. Specifically, it would require the two agencies to organize a joint procurement office and develop a common clinically based formulary (a list of prescription drugs that both agencies’ health plans would agree to provide). Formularies can save money by encouraging providers to substitute generic versions for brand-name drugs or by selecting one or more preferred brand-name drugs within a therapeutic class. The joint formulary would apply throughout the VA health system, to mail-order pharmacy services, and at military hospitals and clinics. Once in place, it would allow the agencies to enter into more “committed-volume” contracts with pharmaceutical manufacturers, which generally lead to lower drug prices. In addition, this option would merge the two agencies’ mail-order pharmacy services. Those changes would save DoD and VA a total of \$21 million in outlays in 2001 and \$810 million through 2010.

In recent years, DoD and VA have made efforts to combine some purchases, but that collaboration is limited, and they continue to maintain separate formularies and procurement offices. The VA’s National Acquisition Center (NAC) is responsible for purchasing prescription drugs for most federal agencies except DoD, and it negotiates and maintains the federal supply schedules of prices for those items. The Defense Supply Center Philadelphia (DSCP), an office of the Defense Logistics Agency, negotiates prices for pharmaceuticals and draws up contracts with vendors to buy and deliver those products to military treatment facilities. DSCP also makes plans to deliver those items overseas quickly in the event of a conflict.

Proponents of joint purchasing would argue that DoD and VA need to rein in the rapid growth of prescription drug costs. Without such measures, both agencies may be forced to ration more tightly the care they provide. In addition, those proponents would say, the need for separate procurement offices is not apparent. According to a 1998 report by DoD’s Inspector General, only 0.05 percent of the items that the DSCP procures on behalf of military facilities are “militarily unique”; most are common items. VA officials maintain that the National Acquisition Center has already achieved significant savings on many of its pharmaceutical purchases through committed-volume contracts.

In developing a common formulary, the two agencies would need to adopt procedures by which physicians could prescribe nonformulary drugs to patients who needed them. (For example, a patient would require an alternative drug if

he or she was allergic to the formulary drug in a therapeutic class.) The design and execution of such an exception process would affect the savings from this option. The stricter the process, the higher would be the cost of documenting and judging the patient's need for a nonformulary drug. A less restrictive process, however, would reduce the government's bargaining power and could reduce the savings from this option.

Critics of consolidation argue that such savings are unachievable anyway. The veterans who obtain health care from the VA make up a very different mix of medical cases than military beneficiaries do—for example, more of them suffer from mental illness, substance abuse, or severe disabilities (such as spinal cord injuries). Thus, the degree of overlap in prescription drugs dispensed by the two agencies may be limited.

Opponents of this option also argue that DoD and VA have already taken important steps to expand their joint procurement. They have entered into 19 joint national contracts to buy pharmaceutical products. Some officials believe that the agencies will achieve the

bulk of any possible savings simply by sharing pricing data with one another so they can negotiate the lowest prices with pharmaceutical manufacturers and suppliers. Moreover, DoD officials contend that they must maintain their own procurement office to ensure that drug supplies will be available quickly in the event of war.

Other critics, however, might argue that this option would not go far enough. Savings could be even larger if DoD implemented a uniform formulary for all three types of pharmacies that its beneficiaries use: pharmacies at military hospitals and clinics, the mail-order service, and retail pharmacies (where beneficiaries receive partial reimbursement through insurance). DoD officials say that as they have tightened the formularies of drugs available at military facilities, beneficiaries have increasingly turned to retail outlets—which often costs DoD more than if the department had purchased the drugs at federal prices and dispensed them itself. (Consequently, the estimate for this option assumes that DoD's insurance claims for pharmacy services would increase.) If DoD could enforce a single formulary at all pharmacy outlets, it would enjoy more substantial savings.

050-22 **Eliminate DoD's Elementary and Secondary Schools**

	Savings (Millions of dollars)	
	Budget	Outlays
	Authority	
2001	-10	-9
2002	4	3
2003	20	18
2004	33	31
2005	44	42
2001-2005	90	85
2001-2010	466	456
SPENDING CATEGORY:		
Discretionary		

The Domestic Dependent Elementary and Secondary Schools (DDESS) system operates schools on several military bases in the United States to educate dependents of military personnel living on those bases. The Department of Defense (DoD) also operates a separate school system for military dependents living overseas.

This option would phase out most of the schools that DDESS runs in favor of increased use of local public schools and would consolidate management of any remaining DDESS schools into the much larger overseas school system. Those changes would save DoD a total of \$1.5 billion between 2001 and 2010. Savings for the federal government as a whole would be less—about \$400 million through 2010—because the Department of Education would have to spend more on Impact Aid, which it provides to local school districts that enroll dependents of federal employees. (These cost estimates assume that funding for Impact Aid would increase enough that the average amount paid per student living on federal land would remain at its current level.)

Critics would argue that DDESS takes an uneven and largely arbitrary approach to educating the dependents of active-duty service members. The distribution of DDESS schools is mainly a historical accident, dating to the time when segregated public schools in the South did not adequately serve an integrated military. The great majority of military bases in the United States have no DDESS school. And where such schools do exist, they generally enroll only dependents of active-duty members who live on-base; those living off-base, and dependents of civilian employees, are the responsibility of local school districts. In addition, most bases with DDESS facilities offer only elementary and middle schools; high school students living on-base use the public schools. In most of the places where DDESS operates schools, accredited public schools are readily available—with the possible exceptions of Guam, Puerto Rico, and West Point, where DoD would continue to run domestic schools under this option.

Closing DDESS schools need not create major disruptions. The roughly 30,000 students who might be affected already change schools frequently, in large part because they move often as their military parent is reassigned. In many locations, the public school district could continue to use the DDESS facility. (DoD already offers support to some local districts by allowing public schools to operate on-base or providing additional limited funding on a per-student basis.) Finally, to ease the transition, DDESS schools would be phased out at a rate of one per district per year rather than all at once. And the local school districts would receive additional one-time funding and transfer of facilities and equipment to help them absorb their new teaching load.

This option might have several disadvantages, however. First, many parents of DDESS students might be reluctant to see the schools phased out because they believe DoD schools offer higher-quality educations. Second, if local school districts did not maintain the on-base schools, former DDESS students might face longer commutes. Third, some of the savings to the federal government from this option would be offset by increased costs to local school districts. In the past, those districts have effectively been subsidized by not having to pay any of the costs of educating DDESS students while receiving at least some direct and indirect tax revenues from their parents. This option would eliminate that subsidy.

050-23 **Consolidate and Encourage Efficiencies in Military Exchange Activities**

	Savings (Millions of dollars)	
	Budget Authority	Outlays
2001	62	47
2002	85	76
2003	108	99
2004	111	107
2005	114	112
2001-2005	479	442
2001-2010	1,093	1,048

SPENDING CATEGORY:

Discretionary

RELATED CBO PUBLICATION:

The Costs and Benefits of Retail Activities at Military Bases
(Study), October 1997.

The Department of Defense's (DoD's) three military exchange systems—the Army and Air Force Exchange Service, the Navy Exchange Command, and the Marine Corps system—provide a wide array of retail stores and consumer services at military bases. With combined annual sales of approximately \$10 billion, operating costs of about \$2 billion, and 80,000 employees, the exchanges constitute one of the largest retail businesses in the United States.

The Congress does not directly appropriate funds to the exchanges, but DoD provides them with about \$400 million worth of free services each year. Those services include maintaining the exterior of exchange buildings (such as roofs, windows, and heating and cooling systems), transporting goods overseas, and providing utilities at overseas stores. The federal status of DoD exchanges offers other advantages as well: exemption from state and local excise taxes, a monopoly over on-base sales of goods and services, and access to free land and interest-free capital. Those exemptions and other subsidies are worth more than \$1 billion a year, the Congressional Budget Office estimates.

Part of that annual subsidy is translated either into lower prices for military personnel and their families or into exchange earnings that support the services' morale, welfare, and recreation (MWR) programs. Another portion is absorbed by inefficiencies. Private retailers in the United States must be efficient to survive in the face of competition. The subsidies that exchanges receive, by contrast, alleviate the pressure of competition and allow the exchanges to operate in ways that private retailers could not afford to. For example, although economies of scale in the private sector often force private retailers to merge, DoD's three exchange systems remain separate—despite numerous studies showing that consolidation would significantly reduce operating costs. Subsidies also distort the incentives that exchange managers face. Because DoD provides free utilities overseas, the Army and Air Force Exchange Service can operate an ice cream production line in Germany without regard to utility costs. And because DoD pays to transport goods overseas, the exchanges can ship beer and carbonated beverages abroad rather than buying them locally.

This option would consolidate the three exchange systems into a single entity and introduce incentives for more efficient operations. Rather than receive DoD support services free of charge, the exchanges would receive a lump-sum appropriation equal to the historical cost of those services and would (like DoD's industrially funded activities) reimburse the providers of those services. Over the long run, consolidating the three exchange systems could save about \$65 million a year in overhead costs. Requiring the exchanges to reimburse DoD for support services would save another \$40 million a year if it induced the exchanges to reduce the costs of those activities by 10 percent. In all, savings would total \$1.1 billion between 2001 and 2010. Initially, the savings might provide additional funding for MWR activities. Over the long run, the increase in exchange earnings would allow DoD to provide its planned level of MWR activities with less support from appropriated funds.

050-24 Increase Competition Between DoD and Private-Sector Housing

	Savings (Millions of dollars)	
	Budget	Outlays
	Authority	
2001	627	32
2002	637	271
2003	648	452
2004	660	540
2005	671	604
2001-2005	3,243	1,899
2001-2010	6,775	5,286
SPENDING CATEGORY:		
Discretionary		
RELATED OPTION:		
050-25		
RELATED CBO PUBLICATION:		
<i>Military Family Housing in the United States</i> (Study), September 1993.		

Most military families receive cash allowances for housing and buy or rent dwellings in the private sector. About one-third, however, live rent-free in on-base housing provided by the Department of Defense (DoD). It costs the federal government about 35 percent more to provide a housing unit than it costs to rent a comparable unit in the private sector. Despite the cost, DoD intends to keep its inventory of housing. The department is experimenting with public/private partnerships that could provide private capital to replace or revitalize on-base housing units, many of which are nearing the end of their service life. But those partnerships are proceeding more slowly than planned, leaving many families in substandard units. Moreover, it is uncertain whether such partnerships will reduce the long-run costs to DoD of providing on-base housing.

This option would reduce the demand for on-base housing by requiring it to compete with private-sector housing. All military families would receive the cash allowance and be free to choose between DoD and private-sector units. DoD—and any companies it takes on as partners—would act like a private landlord, setting rents for on-base units at market-clearing levels (levels at which there would be neither excess vacancies nor waiting lists). On-base housing units would be replaced or revitalized if they met one of two criteria: their value to service members (the market-clearing rent they could command) was sufficient to cover both operating costs and amortized capital costs, or DoD deemed the units indispensable because of their historical nature or importance for military readiness. Those criteria would limit DoD to revitalizing or replacing about 25 percent of its existing housing stock.

The principal advantage of this option would be savings to DoD, which could amount to more than \$5 billion in outlays through 2010. The main source of those savings would be lower revitalization and replacement costs as DoD retired aging units rather than investing in ones that could not cover their costs in competition with private-sector housing. Among other advantages, this option would let DoD focus on its warfighting mission rather than on real estate management, eliminate waiting lists for on-base units, and equalize the value of the housing benefits that it provides to families living on- and off-base. Moreover, the housing costs that service members as a whole pay out of pocket would not change: if rents paid to DoD exceeded the housing allowances paid to personnel living in DoD units, the excess would be returned to all service members through an increase in allowance rates.

The main disadvantage of this option is that reducing DoD’s role as a provider of housing would limit the benefits associated with the current policy. Advocates argue that housing soldiers and their families on-base promotes esprit de corps, morale, and a sense that the military “takes care of its own.” This option would represent a significant break with military tradition. As a result, it could have a negative impact on morale unless it received strong public support from senior military leaders.

On-base units are in high demand among military families primarily because of their low cost to service members. The allowance that families living in DoD housing forfeit equals only about 60 percent of the costs that the federal government incurs in providing a unit. Under this option, families that chose to live on-base would face higher costs than they do today because their rent to DoD would most likely exceed their housing allowance.

050-25 Create Incentives for Military Families to Save Energy

	Savings (Millions of dollars)	
	Budget Authority	Outlays
2001	5	5
2002	26	26
2003	54	54
2004	67	67
2005	68	68
2001-2005	220	220
2001-2010	580	580
SPENDING CATEGORY:		
Discretionary		
RELATED OPTIONS:		
050-24 and 050-31		
RELATED CBO PUBLICATION:		
<i>Military Family Housing in the United States</i> (Study), September 1993.		

The Department of Defense (DoD) spent almost \$310 million last year on gas, electricity, and water for the approximately 216,000 family housing units that it owns in the United States. DoD's efforts to reduce those costs by promoting resource conservation have met with limited success. One reason is that service members living in DoD-owned housing do not pay for their utilities and may not even know how much gas, electricity, and water they use. Landlords in the private sector have found that utility use typically declines by about 20 percent when tenants are responsible for their own utility bills.

This option would install utility meters in DoD housing units, provide cash utility allowances to the families living there, and then charge for utilities based on actual use. Residents who spent less than their allowance could keep the savings; those who spent more would pay the extra cost out of pocket. The budget for allowances would be set equal to the expected cost of utilities under the new system, or about 80 percent of what DoD now spends. The department would allocate that amount among the different housing units on the basis of their size, energy efficiency, and location. Once the program was established, the allowance budget for each year could be set equal to the previous year's actual utility charges plus an adjustment for inflation. As such, if service members were able to cut their utility usage by more than 20 percent, allowances would fall and the savings from this option would increase. If, however, 20 percent overestimates members' true ability to conserve, allowances would be higher and the savings would be less.

Because families who conserved aggressively would receive more in allowances than they would be charged for utilities, this option would reward people who tried to conserve energy. Families who did not economize would face utility bills in excess of their allowance. However, there is a risk that the allowances for some units might not accurately reflect their characteristics. People living in such a unit might find that the allowance did not cover all of their utility costs even after they had made reasonable conservation efforts.

The principal advantage of this option is that it would reduce DoD's costs by giving military families who live on-base the same incentives for conservation as most homeowners and renters—including military families living off-base. Although DoD would incur the up-front costs of determining allowance amounts, setting up a billing system, and installing meters, this option could provide total savings of about \$580 million from 2001 through 2010.

Many DoD housing units already have a connection where a meter could be installed. Nonetheless, a temporary exemption from the metering requirement (and the utility allowances and charges) could be given for some older units if the Secretary of Defense certified that metering them was not feasible.

050-26 Apply Technology to Reduce the Cost of Operating Equipment

	Savings (Millions of dollars)	
	Budget	Outlays
Authority		
2001	-600	-241
2002	-600	-433
2003	-359	-345
2004	74	-10
2005	600	455
2001-2005	-886	-575
2001-2010	4,625	4,654

SPENDING CATEGORY:

Discretionary

RELATED CBO PUBLICATION:

Paying for Military Readiness and Upkeep: Trends in Operation and Maintenance Spending (Study), September 1997.

In some circumstances, agencies need to spend money to save money. This option would provide an additional \$600 million a year to invest in technologies to reduce the operation and maintenance (O&M) costs of weapon systems. The funds would go into “technology insertion accounts” that would be held at the headquarters level of each service and be applied to equipment already used by military units in the field—for example, to support the research, development, procurement, and installation of reliable digital compasses in place of antiquated analog versions, or to replace universal joints on truck axles with constant-velocity joints, which reduce a fleet’s tire wear by one-third. Such investments can lessen the need to repair or replace failed components, freeing up maintenance workers and ultimately reducing the costs of operating equipment. Similar opportunities to save on O&M costs without sacrificing performance exist for all of the services’ aging weapon systems. Over 10 years, the \$6 billion investment in this option could produce \$10.6 billion in savings—for net savings of \$4.6 billion through 2010.

The services currently spend relatively little on technology insertion. Of the \$38 billion spent each year on maintaining weapon systems, only about \$600 million is devoted to technology insertion to reduce costs. As an extreme example, the program manager for the M1A1 Abrams tank—the Army’s second largest weapon system—received only \$1.2 million for research and development (R&D) on ways to reduce the system’s \$2.9 billion annual operating costs. Studies conducted for the Department of Defense (DoD) by the Logistics Management Institute and others have concluded that funding for technology insertion is inadequate.

The military’s current funding for technology insertion programs is limited for three main reasons:

- o The services focus their O&M spending on short-term rather than long-term investment. A March 1998 report by the Air Force Materiel Command stated, “The key barrier in today’s increasingly tight budgetary environment is finding funding for an activity that will yield net benefits only in the future.”
- o Technology insertion initiatives typically need small quantities of funds from different appropriations—R&D, procurement, and O&M. But the services are prohibited (partly by Congressional statutes and partly by internal regulations) from using R&D or procurement dollars for components that reduce O&M costs. The dilemma is that officials who want to reduce O&M costs cannot tap into the correct pots of money—R&D or procurement—to do so.
- o No incentives exist to encourage technology insertion. Maintenance depots do not have a vested interest in improving the reliability of equipment, because that would reduce their already dwindling workload. Officials who control R&D or procurement funds often focus on the costs not of systems already in the field but of the next emerging weapon system.

This option would promote technology insertion through a combination of new funds and new funding mechanisms. The newly created accounts would be “fenced,” or earmarked only for technology insertion, and would contain a blend of R&D, procurement, and O&M funds. Within each service, program managers of weapon systems would compete for access to the funds on the basis of their ability to demonstrate potential gains from technology insertion. Thus, program managers could have the resources to change the O&M costs of their systems. Establishing a separate pool of money for technology insertion would also create incentives within industry to vie for those dollars. If equipment manufacturers, subcontractors, and even depots knew that funding was available for R&D and procurement, they would have an incentive to devise and promote options for reducing O&M costs. Burden-sharing of R&D costs with private industry could increase because more dollars would be available for procuring the new technologies. (Industry officials have stated a willingness to assume the risks associated with research and development, but only if they can be assured of future procurement funding if the R&D is successful.)

The 10-year savings of \$4.6 billion estimated for this option assume that each \$1 invested in technology insertion yields a return of \$3 over five years. The services report a range of returns on such investments, from 3-to-1 to as much as 20-to-1. But the dozens of separate O&M cost-reducing programs now in place suffer from inaccurate accounting of realized savings, so counting

on high rates of return might be unrealistic. Many of those programs do not attempt to track the results of technology insertion. To help ensure a high rate of return under this option, project managers would provide account managers with detailed proposals that would include information about the past O&M costs of their systems, estimates of projected savings, and procedures to track and verify those savings.

Although potentially large, the savings under this option are uncertain. And as with any investment, there is a risk that DoD would not receive a good return on the investment. Service leaders claim they cannot absorb many more proposals for R&D or engineering changes without adding personnel to analyze and implement the proposals—thus adding to the cost of technology insertion and reducing the return. In addition, estimated savings might not materialize because reducing the labor force simply because of a labor-saving initiative is often difficult, both politically and practically. Finally, accurate data on costs and savings are not readily available, further clouding claims of gains made.

Each of the services is currently reforming its programs to account for the life-cycle costs of weapon systems, which could help better identify savings, but those efforts are not closely tied to technology insertion programs. Therefore, some observers argue that DoD should wait until the services can track costs better before offering additional funds to reduce costs.

050-27 Close and Realign Additional Military Bases

	Savings (Millions of dollars)	
	Budget Authority	Outlays
2001	0	0
2002	0	0
2003	0	0
2004	-558	-173
2005	-1,189	-570
2001-2005	-1,747	-743
2001-2010	4,666	1,099
SPENDING CATEGORY:		
Discretionary		
RELATED OPTION:		
050-28 and 050-29		
RELATED CBO PUBLICATIONS:		
Review of <i>The Report of the Department of Defense on Base Realignment and Closure</i> (Letter), July 1998.		
<i>Closing Military Bases: An Interim Assessment</i> (Paper), December 1996.		

Beginning in the late 1980s, the Department of Defense (DoD) sought to reduce its operating costs by closing unneeded military bases. Significant reductions in force structure at the end of the Cold War made many bases unnecessary. Because political and procedural difficulties had long made closing bases nearly impossible, the Congress set up four successive independent commissions on base realignment and closure (or BRAC). Those commissions recommended shutting or realigning (moving departments and facilities at) hundreds of military installations in the United States, Puerto Rico, and Guam. When all of the actions from the four BRAC rounds are completed, DoD will save about \$5.6 billion a year in operating costs, it estimates.

This option would authorize two additional rounds of base closures and realignments in 2003 and 2005. In the long run, such actions can produce substantial savings. However, they require some up-front investment, so costs would increase in the short run. Between 2001 and 2010, this option would reduce DoD's costs by a net total of \$4.7 billion. Beginning in 2012, the department could realize recurring savings of around \$4 billion per year. Those estimates are based on DoD's experience and current projections for the four earlier rounds of base closings. (The estimates do not include the costs of environmental cleanup, since DoD is obligated to incur such costs regardless of whether it operates or closes bases.)

Closing and realigning additional military bases is consistent with DoD's overall drawdown of forces. By several measures, planned force reductions significantly exceed the projected decrease in base capacity. For example, the department intends to cut the number of military and civilian personnel by 34 percent from the 1990 level. But according to DoD, only 21 percent of the base infrastructure in the United States has been eliminated.

The Secretary of Defense asked the Congress in early 1998 and again in early 2000 to authorize two more rounds of base closures. In *The Report of the Department of Defense on Base Realignment and Closure* of April 1998, DoD stated that opportunities exist for further cutbacks and consolidations at several types of bases—such as defense laboratories, test and evaluation installations, training facilities, naval bases, aircraft installations, and supply facilities.

Some analysts, however, argue that the BRAC cuts have gone far enough in matching the planned reductions in forces. The base structure, they say, should retain enough excess capacity to accommodate new risks to national security that could require a surge in the number of military forces. Opponents of more closures also cite the possible adverse economic effects on local communities. Some opponents suggest that savings could be made by demolishing certain buildings or by achieving other operating efficiencies short of closing bases.

050-28 Demolish Excess and Obsolete Structures

	Savings (Millions of dollars)	
	Budget	
	Authority	Outlays
2001	-30	-21
2002	-23	-23
2003	-15	-17
2004	22	11
2005	23	21
2001-2005	-23	-28
2001-2010	98	93
SPENDING CATEGORY:		
Discretionary		
RELATED OPTION:		
050-27		

The defense drawdown has left many military bases with structures that the services no longer need and that have no remaining asset value. Those structures include buildings, such as schools and family housing units, as well as other facilities, such as piers and runways. In some cases, the structures are dangerous eyesores. In other cases, their availability attracts marginal users who benefit from occupying them because the users are not required to pay the full costs of the utilities and other support that the bases provide. Although demolishing those structures would entail up-front spending, it would allow the Department of Defense (DoD) to avoid future maintenance costs. Estimates by DoD suggest that demolition projects may pay for themselves in as little as five years.

This option would increase funding to tear down excess, obsolete structures by \$35 million a year over the 2001-2003 period. A majority of those annual funds, \$30 million, would be allocated to the services' operation and maintenance (O&M) accounts to fund the demolition of excess facilities that are maintained with O&M dollars. The remaining \$5 million would be allocated to the family housing accounts to pay for demolishing obsolete family housing units that are too costly to repair. Those funds would allow DoD to increase demolitions by 6 percent from planned levels and would generate \$22 million in annual savings after 2003.

The services expect to tear down 80 million square feet of buildings by 2003 in accordance with a management reform that the Office of the Secretary of Defense (OSD) began in 1997. Recent defense plans have extended the Air Force's and Navy's demolition programs to 2005 to accommodate their large inventories of structures other than buildings. DoD plans to spend a total of \$773 million on demolition programs during the 2000-2003 period, with an estimated savings in O&M costs of \$160 million a year after that.

However, DoD officials maintain that the department's inventory of real property will still contain excess structures, such as buildings and other facilities that are maintained with O&M dollars, after the current demolition programs are completed in 2005. Funding above planned levels would be necessary to demolish the rest of those excess structures and generate additional O&M savings. In addition, current OSD plans do not fund the destruction of excess, obsolete family housing units. Although the services' family housing commands have adopted demolition as a key tool in their strategies for real property management, critics argue that the resources devoted to those activities are inadequate.

The primary disadvantage of this option is that the quantity of structures that are both excess and obsolete is unclear. If DoD has underestimated its requirements for facilities, demolition programs may destroy a structure that has a potential use in the future. One alternative to demolition is to board up a facility and cease maintaining it. Nonetheless, as long as structures remain in DoD's inventory, the department is likely to feel pressure to maintain them and make them available to potential users.

050-29 Consolidate Depot Functions and Close Some Facilities

	Savings (Millions of dollars)	
	Budget	Outlays
	Authority	
2001	0	0
2002	-386	-120
2003	-243	-111
2004	-94	-32
2005	311	54
2001-2005	-411	-208
2001-2010	1,232	1,234
SPENDING CATEGORY:		
Discretionary		
RELATED OPTIONS:		
050-27 and 050-30		
RELATED CBO PUBLICATION:		
<i>Public and Private Roles in Maintaining Military Equipment at the Depot Level</i> (Study), July 1995.		

Despite four rounds of base realignment and closure (BRAC), the services still have a large number of underutilized buildings and equipment within their network of maintenance depots (government-owned and -operated industrial facilities that repair military equipment). The individual services, the Office of the Secretary of Defense, and the General Accounting Office (GAO) have all recommended closing additional depot facilities to reduce that excess capacity, which GAO has estimated at about 50 percent and rising.

This option would authorize a BRAC commission that would focus exclusively on maintenance depots. Assuming the commission identified up to five facilities for closure, this option could save a total of \$1.2 billion between 2001 and 2010. Closing additional depots would require some up-front investment, but the Department of Defense (DoD) would probably break even within five to six years.

When the actions recommended by the four previous BRAC rounds are completed next year, 19 of the 38 major government-owned and -operated depots that existed in 1988 will no longer be functioning as government entities. Nevertheless, the depot network will still have excess capacity because its workload is declining for four reasons: the overall military force structure and stocks of weapons and equipment continue to be reduced, most new or modified weapon systems are more reliable than previous systems, manufacturers of weapon systems are seeking greater control over maintenance support for their systems, and some unit commanders are conducting more repairs in their own local maintenance facilities (see option 050-30).

Proponents of a BRAC commission specifically for maintenance depots would argue that the unique characteristics of depots—including nondeployable personnel, huge fixed capital assets, and a mostly civilian workforce—set them apart from conventional military bases. In that view, the special expertise required to understand depot-industry issues—to determine to what extent repairs could be made more efficiently in the private sector and to define and identify excess capacity from an overall DoD perspective—underscores the need for a specialized BRAC panel whose members have knowledge of the unique attributes of the depot system. (That argument could also apply to the defense laboratories, research facilities, and test and evaluation facilities.)

Opponents of this option, by contrast, might argue that depot realignments and closures have gone far enough. Many critics feel that DoD should retain enough capacity within its depot system to accommodate new risks to national security that could require a surge in depot-level maintenance. In addition, depot closures could have adverse economic effects on local communities—at least in the short run.

Instead of closing more depots, opponents would argue, DoD could reduce excess capacity by entering into public/private partnerships that utilized that capacity during peacetime and thus made depots more cost-effective. For example, the commercial aviation industry reportedly faces a shortfall in its depot capacity and could potentially become a partner in sharing the costs of maintaining military depots.

050-30 Change the Management and Pricing of Repairs

	Savings (Millions of dollars)	
	Budget Authority	Outlays
2001	46	35
2002	154	125
2003	735	586
2004	403	447
2005	352	370
2001-2005	1,691	1,563
2001-2010	3,434	3,321
SPENDING CATEGORY:		
Discretionary		
RELATED OPTIONS:		
050-29		

When subcomponents of weapon systems (such as transmissions and radars) break down, unit commanders often have them repaired in the unit’s own maintenance and repair shops—called intermediate maintenance facilities, or general support facilities in the Army. That is the case even if it would be less costly for the Department of Defense (DoD) as a whole if the subcomponents were sent to large, centralized maintenance facilities—called depots—for repair.

This option would reduce costs by changing the way in which DoD manages and charges for repair of those subcomponents—known as depot-level repairables (DLRs). Under this option, repair work for DLRs would be allocated to either depots or intermediate facilities by managers who were aware of the full costs of both sources of repair and had an incentive to minimize DoD’s total repair bill. Such a system could save the department \$3.4 billion over 10 years through improving inventory efficiency alone.

In the early 1990s, DoD tried to reduce the demand for repairs and make unit commanders more careful in their use of DLRs by shifting repair funds out of central accounts and into the budgets of individual units. To a large degree, the plan succeeded: demand for repair and replacements of DLRs declined. But because of problems in the price structure for repairs, shifting financial responsibility to unit commanders had unintended consequences. The prices that depots charge for DLRs overstate the actual cost of doing repairs because depots must cover their overhead and management costs. By contrast, some of the costs that intermediate facilities face (including the costs of capital and military labor) are not included in the prices that units pay. Thus, commanders have a financial incentive to repair DLRs in their own facilities regardless of the actual cost, and repair jobs that before would have gone to a depot are being handled by intermediate facilities. According to one joint Navy/Office of the Secretary of Defense study, intermediate maintenance is up to twice as expensive as depot repairs. Because intermediate facilities are not as well equipped for some tasks as depots, repairs could take longer or have higher failure rates. Besides raising costs, the shift in workload has increased excess capacity in the depots and may have decreased the quality of repairs overall.

This option would try to improve the distribution of the DLR workload between depots and intermediate maintenance facilities by centralizing management of DLRs. More important, it would provide a pricing system that more accurately reflects the actual cost of repairs. Within each service, equipment (or item) managers would assume control of all DLR inventories and allocate repairs between depots and intermediate facilities. They, not unit commanders, would decide which source of repair was less costly. Commanders would have a single point of contact—the item manager—for each type of DLR, regardless of whether the work had been allocated to an intermediate facility or a depot.

Under this option, both depots and intermediate facilities would charge item managers for repairs. Each repair facility would set its prices to cover only those costs that varied with the DLR workload, taking into account the

time to complete the work, quality, and return of broken DLRs. In other words, it would cover the additional costs that would be incurred for each specific repair, such as materials, labor, and transportation. That pricing structure has been proposed by economists at RAND, the Center for Naval Analyses, and elsewhere. By encouraging item managers to send DLRs to the facility that could do the work at the lowest cost, it would let DoD minimize its total repair bill.

Intermediate facilities would continue to rely on direct appropriations to cover their fixed capital and overhead costs. In addition, military personnel who would deploy as part of maintenance units in wartime could continue to be assigned to intermediate facilities in peacetime and be paid from their service's central military personnel account. However, costs that varied with the amount of repair work at the intermediate facility would be covered not through direct appropriations but through the prices charged for DLR repairs. Those costs would include the salaries of civilian workers and military personnel whose positions were required not because of wartime deployments but because of the DLR repair workload in peacetime. In turn, the intermediate maintenance facilities would be required to reimburse the services' military personnel accounts for those salaries.

In the case of depots, repair costs that did not vary with workload would be paid by customers through a flat charge that did not depend on how much work they sent to the depot that year. Such a two-part pricing system—a flat charge plus a variable fee based on workload—is similar to the system that some telephone companies use. Costs that were not related to ongoing repair tasks but were previously included in DLR prices would be covered by direct appropriations. For example, the costs of maintaining excess facilities for wartime, such as the Army's Watervliet facility (a unique plant that manufactures large gun barrels), would not be charged to depot customers. That approach to pricing would allow the depot to cover its total costs but not charge more for an additional task than the task would cost to perform. A

study by RAND concluded that such an approach would reduce the prices that depots charge for repairs. A price reduction could shift a significant amount of the DLR workload back to depots.

One disadvantage of this option is that commanders would have less control over their intermediate maintenance facilities. Thus, it would be harder for them to ensure that those facilities provided an adequate minimum number of personnel to cover wartime tasks or to support deployments and contingency operations. In addition, centralization and worldwide management of the DLR inventory would require new software and computer systems.

Another disadvantage is that developing appropriate prices for the depots and intermediate facilities could prove difficult. Depot managers, anxious to attract work by keeping their prices as low as possible, might try to move costs into the flat charge or direct appropriations that were in fact part of the costs of repair that varied with workload. Alternatively, depot managers might be reluctant to separate repair costs that varied with workload from those that were fixed because doing so would highlight their degree of excess capacity. In addition, an accurate historical database of repair costs at intermediate facilities does not exist, which makes pricing DLR repairs there difficult.

A more fundamental concern is that it might be difficult to predict exactly how managers would respond to the new prices. (DoD, for example, failed to predict how managers would respond to the current DLR pricing scheme.) The unintended consequences of changing prices could outweigh the benefits if this option was not implemented carefully and systematically. Opponents of this option might argue that it would be simpler for DoD to just order work to go to the facility that could perform it at the least cost. Supporters might counter that DoD already has rules about where DLRs are to be repaired but that current DLR prices are driving units to ignore those rules.

050-31 Allow Federal Agencies to Bargain for Electricity

	Savings (Millions of dollars)	
	Budget Authority	Outlays
2001	36	36
2002	128	128
2003	90	90
2004	28	28
2005	23	23
2001-2005	307	307
2001-2010	422	422

SPENDING CATEGORY:

Discretionary

RELATED OPTIONS:

050-25 and 270-07

RELATED CBO PUBLICATIONS:

Electric Utilities: Deregulation and Stranded Costs (Paper), October 1998.

Should the Federal Government Sell Electricity? (Study), November 1997.

The federal government spends more than \$2 billion per year in the United States on electricity, of which about 50 percent is purchased through the Department of Defense. Although the government is a large consumer of electricity, it pays full retail prices. A provision in a continuing appropriation act for fiscal year 1988 (Public Law 100-202, section 8093) requires federal agencies to conform to state laws regarding electricity purchases. Some states have already allowed retail customers to choose their electricity supplier and negotiate lower prices.

This option would let the federal government realize such savings in all states, regardless of state regulations on retail customers. The resulting savings could total around \$422 million over 10 years if agencies' appropriations were reduced by the expected decrease in electricity bills. (The lower savings in 2001 reflect phase-in and transition costs.)

The federal government would face lower electricity prices if it purchased power on a competitive basis. In that situation, suppliers would have an incentive to provide electricity at the lowest possible cost and offer new services. Under traditional regulation, utilities generally gave customers the same product: reliable electricity at a fairly high, but uniform, price. If the federal government was allowed to negotiate for electricity, suppliers would be encouraged to furnish a greater variety of electricity services—with different prices and different degrees of reliability, depending on what the federal government wanted or needed. Some states, such as California, Massachusetts, Pennsylvania, and Rhode Island, have already introduced retail competition, allowing all retail customers—including federal agencies—to choose their electricity provider. Any reduction in federal spending because of Congressional action would have to take into account that those states already allow price competition and others will allow it before 2010.

Several bills to restructure the electricity industry were introduced in the 105th Congress. They would have allowed all customers, not just the federal government, to buy electricity in a competitive market. A comprehensive electricity-restructuring bill like one of those may be needed for the federal government to realize all of the savings from negotiating lower prices for electricity. Otherwise, an electricity provider that once served the federal government might be reluctant to lose so large a customer and could try to impede the government's choice of suppliers. (In some parts of the country, no alternative suppliers may be available.) Also, the federal government could be subject to surcharges if it broke a contract with its old supplier. Such surcharges would diminish the savings from this option. The federal government might also be perceived as unfair if it was allowed to choose suppliers but no other retail customer was. Prices to other consumers could rise if the federal government chose a new supplier and the utility that once served it could not search for alternative buyers for the electricity.

050-32 Sell Surplus Real Property of the Department of Energy

	Savings (Millions of dollars)	
	Budget Authority	Outlays
2001	0	0
2002	3	3
2003	3	3
2004	3	3
2005	3	3
2001-2005	12	12
2001-2010	17	17
SPENDING CATEGORY:		
Mandatory		

The Department of Energy (DOE) controls about 2.4 million acres of land, much of it surrounding sites in the West and Southeast that have contributed to the nation's efforts to develop nuclear weapons. DOE's Office of Inspector General (IG) recently identified 309,000 acres that it considers no longer essential to carrying out the department's core missions of weapons dismantling, environmental cleanup, technology development, and scientific research. That acreage is part of the Oak Ridge Reservation in Tennessee, the Hanford Site in Washington, and the Idaho National Engineering Laboratory. Additional real property that may be excess but was not evaluated in the IG report exists at such DOE facilities as the Nevada Test Site, the Los Alamos National Laboratory in New Mexico, the Fermi National Accelerator Laboratory in Illinois, and the Savannah River Site in South Carolina.

To demonstrate the potential savings from disposing of those properties, this option would require DOE to sell at market value 16,000 acres at the Oak Ridge Reservation that the IG has identified as excess. (The IG proposed transferring other excess property to the Department of the Interior for management as a natural resource.) That sale—conducted over four years to minimize the effect on local land values—could yield savings of \$17 million during the 2001-2010 period, including reduced outlays for property management. That sum excludes any savings associated with reducing DOE's liabilities for payments to local governments in lieu of taxes or the costs of cleaning up future accidents. The estimate also assumes that the sale would be exempted from requirements of the Federal Property Administrative Services Act to first offer surplus property to state and local governments.

Opponents of selling excess land argue that DOE's mission is changing to include the stewardship of land as a valuable national resource. Most of the acreage in question was used as buffer lands and has been little touched in the past 50 years. In line with the land's unique qualities, DOE has established environmental research parks at seven of its properties to protect species and cultural sites and to provide a natural laboratory for research and environmental monitoring. It has also made agreements with the Fish and Wildlife Service and the Bureau of Reclamation to manage certain areas. Moreover, some of the land (excluding the acres at Oak Ridge to be sold in this option) may be contaminated by hazardous materials or unexploded ordnance, which would have to be disposed of before transfer could occur. (Such disposal would diminish the savings from this option.) In addition, DOE still needs buffer lands to control the future spread of contaminants from its nuclear sites.

Proponents argue that selling unneeded DOE property would not only save money but also make the land available for more uses, including agriculture, recreation, and residential or commercial development. They note that according to the IG, cleanup will be necessary at only a small part of the excess acreage. Moreover, the government would still have to pay cleanup costs if it kept or transferred the property rather than selling it.

050-33 Eliminate Cargo Preference

	Savings (Millions of dollars)	
	Budget Authority	Outlays
2001	177	148
2002	272	252
2003	371	351
2004	380	374
2005	389	387
2001-2005	1,589	1,511
2001-2010	3,679	3,589

SPENDING CATEGORY:

Discretionary

The Cargo Preference Act of 1904 and other laws require that U.S.-flag vessels be used to carry certain government-owned or government-financed cargo that is shipped internationally. Eliminating cargo preference would lower federal transportation costs by allowing the government to ship its cargo at the lowest available rates. That would reduce the government's costs by \$177 million in 2001 and a total of almost \$3.7 billion over the next decade.

Two federal agencies—the Department of Defense (DoD) and the Department of Agriculture (USDA)—account for about 90 percent (by weight) of the government shipments subject to cargo preference laws. The preference applies to nearly all DoD freight and three-quarters of the USDA's shipments of food aid, as well as shipments associated with programs of the Agency for International Development and the Export-Import Bank. Roughly 70 percent of the savings from eliminating cargo preference would come from defense discretionary spending, with the other 30 percent from nondefense discretionary spending.

Supporters of cargo preference argue that it promotes the economic viability of the nation's maritime industry. That industry has suffered at the hands of foreign competition in recent decades. Under federal law, U.S. mariners must crew U.S. vessels, and in general, U.S. shipyards must build them. Because U.S.-flag ships face higher labor costs and greater regulatory responsibilities than foreign-flag ships, they generally charge higher rates. Without guaranteed business from cargo preference, many U.S.-flag vessels still engaged in international trade would leave the fleet. They would do so either by reflagging in a foreign country to save money or by decommissioning if they could not operate competitively. Supporters also argue that cargo preference helps bolster national security by ensuring that U.S.-flag vessels and U.S. crews are available during wartime. Finally, eliminating cargo preference could cause U.S. ship operators and shipbuilders to default on loans guaranteed by the government. (The possibility of such defaults is not reflected in the estimated savings for this option.)

Critics of cargo preference say it represents a subsidy of private industry by taxpayers, which simply helps a handful of carriers preserve their market share and market power. In 1999, the program cost was nearly \$1 million per vessel for the 475 ships, barges, and tugboats benefiting from the program. Opponents also point out that even DoD officials question the national security importance of the Merchant Marine fleet. DoD has invested in a fleet of its own specifically for transporting military equipment. It also contracts with foreign-flag ships when needed. In addition, critics of cargo preference argue that the U.S. government is at a competitive disadvantage in selling surplus agricultural commodities abroad because it must pay higher costs to transport them.